RECENT LABOUR MARKET DEVELOPMENTS IN BRITISH COLUMBIA: PART II: THE STRUCTURE OF UNEMPLOYMENT

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THE STRUCTURE OF UNEMPLOYMENT IN BRITISH COLUMBIA

Part I of this paper examined the overall behavior of the B.C. labour market during the 1980s. Although this aggregate analysis is both informative and an essential first step, it nonetheless may miss some important phenomena -- especially if there are large differences in labour market behavior across regions, industries, occupations, types of workers or other subgroups. This part provides a more detailed examination of B.C. labour market developments, beginning with the employment and unemployment experiences of the province's regions.

Regional Differences in Labour Market Experience

As noted in Part I of the paper, there were substantial differences across Canada's regions in the impact of the 1982-83 recession and in the recovery from that recession. Two questions are of primary interest in this examination of behavior in the various regions that make up B.C.'s economy: (i) whether the main labour market developments of the 1980s had differential impacts on regions within the province, and (ii) whether there is evidence of worsening structural unemployment along regional lines within B.C.

Since 1975 the monthly Labour Force Survey has provided key labour market measures for nine economic regions within B.C.:

910 - The East Kootenay regional district

920 - The Central Kootenay and the Columbia-Shuswap regional districts

930 - The Kootenay Boundary, Okanagan-Similkameen, Central Okanagan and North Okanagan regional districts

940 - The Squamish-Lillooet and the Thompson-Nicola regional districts

950 - The Fraser-Cheam, Central Fraser Valley, Dewdney-Allouette, Greater Vancouver, Powell River and Sunshine Coast regional districts

960 - The Capital, Cowichan Valley, Nanaimo, Alberni-Clayoquot, Comox-Strathcona and Mount Waddington regional districts

970 - The Cariboo, Bulkley-Nechako and Fraser-Fort George regional districts

980 - The Peace River-Liard regional district

990 - The Central Coast, Skeena-Queen Charlotte, Kitimat-Stikine regional districts and the Stikine region

Generally, data are only available for economic regions 980 and 990 combined. Thus there are eight regions in the analysis in this section. It should also be noted that the statistical reliability of these regional data is considerably lower than that for the province as a whole. This is especially the case for regions other than 950 and 960. Separate data are also available for two CMAs (Vancouver and Victoria) which are part of regions 950 and 960 respectively.

Table 5 shows employment growth by region over the 1975-90 period. Three sub-periods are examined: the pre-

recession trend (1975-81), the initial impact of the downturn (1981-82), and the subsequent recovery (1982-90). The 1975-81 period is a bit short to provide evidence of long run trends; however, this is the best that is available for this purpose.

As Table 5 makes clear, there are enormous differences across these regions in their employment growth experiences. Two of the regions (East Kootenay and West Kootenay) had declining employment during the pre-recession period. Three regions (Okanagan-Kootenay Boundary, Lillooet-Thompson, and Cariboo-Ft. George) experienced spectacular growth during this period. The remaining three regions (which include the two most populous regions) experienced moderate growth, albeit somewhat below the B.C. average.

The decline in employment associated with the 1981 downturn varied substantially across regions. These differences are even more pronounced when measured against their pre-recession trends. The West Kootenay and the Lower Mainland were the least affected by the recession; all other regions experienced declines in employment (relative to trend) that exceeded the B.C. average.

There were also large differences across regions in the extent of recovery. Employment growth was strongest in the Lower Mainland, Vancouver Island and Peace River-Liard-Skeena-Stikine regions, the three regions that grew modestly prior to the recession. Employment in the East Kootenay has continued to decline. The remaining regions experienced positive but low rates of employment growth during the 1982-90 period.

The final column in Table 5 shows the 1982-90 trend growth rate relative to that of 1975-81. The Lower Mainland and Vancouver Island have essentially returned to their

previous trend growth paths (which were slightly below average before the recession but were somewhat above average during the expansion). The remaining regions display considerable diversity in experience. None of the regions which displayed rapid employment growth prior to the recession have achieved above average growth subsequently.

Table 6 shows labour force participation by region for selected years during the 1975-90 period. In parentheses below each region's participation rate is its rank order from highest to lowest in that year. For B.C. as a whole, the participation rate rose from 1975 to 1981, declined until 1984 and subsequently rose again during the economic expansion of 1984-89. With the onset of the recent downturn, participation declined slightly in 1990. These same trends have also occurred in each region.

Although the regional labour force participation rates have behaved in a similar fashion over time, there are large differences in participation across regions. Participation is generally substantially above average in the Cariboo, Peace and East Kootenay, and somewhat above average in the Lower Mainland. In contrast, participation is generally below average in West Kootenay, Okanagan, and Vancouver Island. The ranking of regions by participation remained fairly constant over the 1975-90 period. However, there has been some convergence in the magnitude of differences in participation. The range declined steadily from 19.5 percentage points in 1975 (high of 69.5 vs. low of 50.0) to 12.6 percentage points in 1989, rising to 13.7 points in 1990. Both the standard deviation and coefficient of variation also declined during this period. Thus B.C.'s regions have become more rather than less similar during the 1980s in the extent to which individuals participate in the labour force.

Another key indicator of labour market activity -- the employment-population ratio -- is shown in Table 7. Again, this measure is shown for each region and B.C. as a whole for selected years during the 1975-90 period. As discussed in Part I of the paper, B.C.'s employment-population ratio rose from 1975-81, declined from 1981-84 and subsequently rose until 1989. This pattern was also observed in most regions.

The variations across regions in employment rates are similar to those observed for labour force participation. East Kootenay, Cariboo, Peace, and the Lower Mainland are consistently above the B.C. average, and West Kootenay, Okanagan and Vancouver Island below average. The rankings of the regions have remained approximately constant over the 1975-90 period. However, as was the case with labour force participation, there is a clear trend toward convergence in the fraction of the population in paid employment. The range in employment-population ratios declined from 18.0 percentage points in 1975 to 13.2 in 1990. Other measures of variation across regions (the standard deviation and coefficient of variation) display a similar downward trend.

Table 8 shows the unemployment rate experience of B.C.'s regions. These are also displayed in Figure 20 (a) and (b). As is clear from these two figures, the time series behavior of unemployment across regions has been very similar. Unemployment rose substantially in all regions, peaking between 1982 and 1984. The extent of the subsequent decline has been similar, but not identical, across regions. By 1990 the unemployment rate in each region had returned to approximately its 1975 level, as also occurred in the province as a whole. However, there were differences across regions in the extent to which the unemployment rate approached its pre-recession (1980-81) levels as the economy reached a cyclical peak in 1989-90. In most regions (as in

the province as a whole) the unemployment rate in 1990 remained well above its pre-recession level -- especially in the Peace, Cariboo and Okanagan regions and to a lesser extent in the Lower Mainland. In contrast, the Vancouver Island unemployment rate had by 1990 fallen below its 1980-81 level.

As was the case with other labour market indicators, there are large differences across regions in the level of the unemployment rate. However, the unemployment rate does provide a somewhat different picture of the state of the regional labour markets than the employment growth rate, participation rate or employment-population ratio. In particular, only the Lower Mainland has an unemployment rate that is consistently below the B.C. average. Regions such as East Kootenay, Cariboo, and Peace-Skeena -- which had above average participation and employment-population rates -- have above average unemployment rates, albeit not as substantially above the B.C. average as regions such as Lillooet and West Kootenay whose participation and employment-population rates are below average.

In contrast to the behavior of the participation and employment rates, the extent of regional variation in the unemployment rate has not fallen. The range in 1990 was similar to that observed in 1980-81 as well as to that in 1975. Similarly, there is not a downward trend in other measures of variation (standard deviation, coefficient of variation). The ranking of regions according to their unemployment rates has also not changed very much between the pre-recession and current periods. The most dramatic change was Vancouver Island which had the second lowest unemployment rate in 1990 but was fifth or sixth prior to the 1982-3 downturn.

The analysis of this section was intended to determine the extent to which the main labour market developments of the 1980s had differential impacts on B.C.'s economic regions, and therefore the extent to which the aggregate analysis of Part I may miss some of the variety of regional experience. An additional objective was to examine evidence relating to structural unemployment along regional lines. Several conclusions are evident. There are substantial differences across B.C.'s regions in such key labour market indicators as the employment-population ratio, unemployment rate, and labour force participation rate. However, an important finding is that these differences did not widen during the 1980s. Indeed, variations across regions in the employment rate and participation rate narrowed during the 1975-90 period. Differences across regions in the unemployment rate remained similar in nature, despite large differences in the rate of employment growth. Because increased structural unemployment would typically be characterized by wider regional differences in unemployment, participation and employment rates, this evidence suggests that regional structural unemployment did not increase during the 1980s.

The analysis also indicates that there was considerable similarity in the pattern of key labour market developments by region. In particular, the time series behavior of unemployment, participation and employment rates displayed in the various regions is very similar to that for the province as a whole. Only the patterns of employment growth display considerable diversity. The Lower Mainland and Vancouver Island exhibited a pattern similar to that for the province as a whole while employment growth in the other regions differed considerably from the aggregate behavior -- both in terms of the impact of the 1982-83 downturn and in the extent to which the region's employment growth returned to its pre-recession rate.

Age-Sex Differences in Labour Market Experience

In both British Columbia and Canada as a whole, dramatic changes in the age-sex composition of the labour force have taken place during the past three decades. This section examines these changes, with particular attention to trends and developments occurring in British Columbia during the past fifteen years. The primary objective of this section is to address the following questions:

(i) what have been the main trends and developments affecting the age-sex composition of the B.C. labour force and how have these differed, if at all, from those occurring in Canada as a whole?

(ii) did the main labour market developments of the 1980s have differential effects on different age-sex groups?

(iii) is there evidence of worsening structural unemployment or labour market adjustment problems among particular age-sex groups?

Several of the changes discussed in this section -- such as the rise in female labour force participation -- are among the most profound labour market developments of the post war period. They are important not only in their own right, but also are intimately related to other significant phenomena such as changes in fertility and in family size, the rise of dual and multiple earner families, the growth of part-time work, and the rapid growth of service sector employment. Clearly it would be difficult to provide a detailed account of these inter-related phenomena and their multiple causes. Our focus is on documenting the main changes in the age-sex composition of the labour force that have occurred and in examining evidence relating to structural unemployment and adjustment difficulties among particular age-sex groups in the labour force. Broader questions relating to the causes and implications of these developments are touched upon, but not examined in detail.

Tables 9 to 14 summarize the behavior of key labour market indicators for different age-sex groups in B.C. during the 1975-90 period. Although finer breakdowns of the data are available, the main developments can be shown clearly with the groupings shown -- males, females, youths (15-24 year olds), 25-44 year olds (sometimes referred to as prime age workers), 45-64 year olds (sometimes called older workers), and seniors (65+ year olds). Even with these limited breakdowns, there is a mass of statistics to present and discuss. In order to avoid becoming mired in this detail, the text summarizes the main developments, leaving to the interested reader inspection of Tables 9 to 14 which provide the full account.

The two most significant developments affecting the supply side of the labour market were the demographic bulge associated with the baby boom generation and the dramatic rise in the labour force participation of females, especially married females. The impacts of these developments on B.C. during the 1975-90 period are evident in Tables 9 and 10 which show growth rates of the source population (population of working force age) and labour force respectively and Table 12 which shows labour force participation rates by age and sex. In order to provide some relative perspective, the bottom part of each table shows average annual outcomes for both B.C. and Canada for two sub-periods: 1975-81 (pre-recession) and 1982-90 (recession and recovery). Conveniently, this break into pre- and post-1982 not only isolates the 1982-90 business cycle, but also captures important shifts in long term trends in population and labour force growth.

As discussed in Part I, the source population grew very rapidly in Canada and B.C. (especially the latter) during the 1960s and 1970s. This rapid growth was largely associated with the coming of working force age of the baby

boom generation, a process which was largely complete by 1980. Since that time source population growth has slowed considerably, although growth in B.C. has remained above the Canadian average due to B.C. generally receiving more than its share of immigration and inter-provincial migration. Because these latter flows are sensitive to changes in economic conditions, B.C.'s source population growth has also varied more than that of Canada as a whole.

These developments are illustrated by the age group breakdowns in Table 9. With the end in 1980-81 of large entering cohorts, population growth among youths has actually been negative since that time -- so that the number of youths has been declining in absolute terms. This decline was particularly evident during the 1982-87 period. In B.C. the decline has become less sharp in recent years, due mainly to net inter-provincial migration.

With the end of the large entering youth cohorts, the population of labour force age has both been growing more slowly and aging. This is especially the case for B.C., where the rate of population growth among seniors has been significantly higher than that for Canada as a whole.

Throughout the 1975-90 period, the 25-44 years age group experienced rapid growth. In the 1990s, as the leading edge of the baby boomers hits age 45 (including, unfortunately, the authors of this paper!), the 45-64 years age group will experience high rates of population increase.

Labour force growth depends on changes in both the source population and in the fraction of that population participating in the labour force. Table 10 shows the rates of labour force growth of the various age-sex groups and Table 12 the labour force participation rates. Labour force growth also slowed considerably during the 1980s relative to

earlier decades. B.C. experienced somewhat more rapid labour force growth than did Canada. Because the trends in participation were almost identical, this difference can be attributed to B.C.'s more rapid growth in the working age population.

The overall rise in labour force participation reflects two offsetting underlying trends: a gradual decline in male participation and a dramatic increase in the participation of females. As a consequence, labour force growth of females is much more rapid than that of males (Table 10), despite very similar growth in the source populations of males and females (Table 9).

The participation rate of youths also increased during this period. However, in addition to the upward trend there was a substantial decline during the 1982-83 recession, followed by a recovery to pre-recession levels of participation by 1989. Participation of other age groups also fell (or increased at a lower rate) during the recession, but not to as great an extent. The greater sensitivity of youth participation to changes in economic conditions largely reflects decisions to remain in or return to school (high school, college or university) during downturns in economic activity. Young adults who are already in school may also find it more difficult to obtain part-time work during recessions, and thus are more likely to withdraw from or remain out of the labour force.

Those aged 65 and over were the only age group showing a decline in participation during this period. Nonetheless, within each of the age groups whose participation rates trended upwards over the 1975-90 period, the overall increase reflected the two offsetting factors noted above: increased participation of females and decreased participation of males.

As a consequence of the above trends, the composition of the labour force changed considerably between 1975 and 1990. The proportion of youths in the labour force fell from 27% to 20%, while that of males declined from 63 to 56%. The proportion of females grew from 37 to 44% and that of prime age workers (25-44 year olds) from 45 to 54%.

These changes in the age and sex composition of the labour force have numerous and often profound impacts. One aspect worth noting at this point relates to the possible implications of `crowding' due to the growth in the relative size of particular groups or cohorts. During the 1960s and 1970s, the high rates of labour force growth of youths were accompanied by higher than normal rates of youth unemployment. Although this rise in the relative unemployment rate could have had numerous causes, the increased supply of youths relative to other age groups was generally found to have been a contributing factor. If this cohort size or crowding phenomenon also occurred during the 1980s, we would expect some improvement in the unemployment rates of youths relative to other groups, but some deterioration in the relative unemployment experience of groups such as 25-44 year olds and females.

Table 11 summarizes the employment growth experience. As discussed in Part I, B.C.'s employment growth during the 1960s and 1970s was extremely rapid. The combination of slower rates of increase in the source population, less rapid growth in labour force participation, and the severe recession of 1982-83 resulted in much slower employment growth during the 1980s. The contrast between the 1980s and earlier decades is particularly sharp for B.C., largely due to the more severe impact of the downturn relative to the rest of Canada.

The impact of the recession differed substantially across age-sex groups. Employment of males declined much more than that of females, and employment of youths fell much more drastically than was the case for other age groups. However, seniority alone was not the only consideration; workers in the 45-64 age group suffered a larger drop in employment than those in the 25-44 age bracket.

Because of these differences in employment growth, the age-sex composition of employment changed significantly during this fifteen year period. Males fell from 63 to 55% of total employment, and the proportion of females rose correspondingly. Youths declined from 25 to 18% of total employment, while 25-44 year olds increased from 45 to 55%. The number of 45-64 year olds fell slightly as a proportion of total employment. These changes in the makeup of the employed in B.C. are almost identical to those that took place in Canada as a whole.

Movements in the employment-population ratios (shown in Table 13) reflect both the longer run trends in labour force participation of the various age-sex groups and the cyclical movements in participation and employment. The moderate upward trend in the employment rate is thus the outcome of the two underlying trends discussed previously: a modest decline in the male employment-population ratio and sharp growth in the female employment rate. Superimposed on these trends are the impacts of the recession which temporarily reduced employment rates of all age-sex groups, especially those of youths and males.

Table 14 shows the unemployment rates of these groups during the 1975-90 period. Because the unemployment experience is a central concern of this paper, the movements over time of the unemployment rates of different age groups

are also shown in Figures 21 (Males), 22 (Females) and 23 (Both Sexes).

As the bottom part of Table 14 indicates, B.C.'s unemployment rate was, on average, very close to Canada's during the pre-recession 1975-81 period. However, unemployment increased much more substantially in B.C. during 1982-83 and the gap between B.C. and Canada was not closed until the peak of the business cycle was reached in 1990.

As Figures 21-23 demonstrate, the broad pattern of behavior was common to all age and sex groups. Unemployment trended downward somewhat during the 1975-81 period, rose sharply in 1982-83, and subsequently declined as the economy recovered.

The ranking of unemployment rates by age group remained the same over this period for both males and females. Youths experienced the highest unemployment rates, and older workers the lowest. However, there was some tendency for the magnitudes of the differences across age groups to converge during the 1980s. This tendency was clearest for males (Figure 21), but also occurred for females (Figure 22). The convergence is illustrated more vividly in Figure 24 which shows the ratio of the youth to prime age unemployment rates for males and females separately as well as combined.

Since 1980, when the number of youths in the labour force began to decline, the youth unemployment rate has fallen relative to that of prime age adults. As Figure 24 makes clear, this decline is mainly due to a sharp drop -- from about three times as large to about twice as large -- in the unemployment rate of male youths relative to that of prime age males.

Youth unemployment rates typically exceed those of adults for several reasons. A proportionally greater number of youths enter or re-enter the labour force each period; this movement into the labour force often involves a period of search unemployment. In addition, youths experience high employment turnover, in part reflecting the experimentation with different careers and employers that is part of the process of matching workers and jobs. Further, as the employment growth data in Table 11 verify, youth employment falls more than that of any other group during economic downturns, partly due to the fact that those with the least experience and seniority are most likely to be laid off in these circumstances.

Although these factors have continued to operate during the 1980s, the evidence in Figure 24 also suggests that the decline in the size of the youth cohort has improved their relative employment prospects compared to the situation that existed during the 1970s. This change in relative unemployment experience occurred even during the 1982-83 recession -- a period in which youth unemployment increased more than that of adults in absolute terms. Although obviously not conclusive, this provides further evidence that `crowding' effects associated with the increase during the 1960s and 1970s in the relative importance of youths in the labour force contributed to the serious youth unemployment problem during those decades. This evidence also suggests that youth unemployment will continue to be less of a policy concern during the 1990s, as has already been observed to be the case during the 1980s. This conclusion is not intended to imply that issues relating to the transition from school to work will not and should not continue to concern policy makers; rather it is simply a statement about which issues will receive the greatest amount of policy attention.

Because their unemployment rate exceeds that of other age groups, youths contribute more than their `share' of unemployment. However, the extent to which this is the case has changed substantially. In 1975 youths made up 27% of the labour force and accounted for 46% of all unemployment. By 1990 youths were 20% of the labour force and accounted for 28% of total unemployment. The combination of a decline in the number of youths in the labour force and the convergence of youth and adult unemployment rates has resulted in a sharp decline in the amount of unemployment associated with young job seekers.

Figures 21 to 23 also suggest that the unemployment rates of those in the 25-44 and 45-64 age brackets -- groups whose unemployment rate is below average -- have converged slightly toward the overall unemployment rate.

Inspection of Table 14 also indicates a clear tendency toward narrowing during the 1980s of unemployment rate differences by gender. This development is illustrated in Figure 25 which plots the ratio of female to male unemployment rate for each age group. Only for youths did this ratio remain approximately unchanged (in the 0.8 to 1.0 range) during the 1975-90 period. For both prime age and older workers, female unemployment rates fell relative to those of males (or, if one prefers, male rates rose relative to those of females) beginning around 1982. This decline was especially sharp for prime age workers.

Clearly there was a tendency during the 1980s for unemployment rate differences by age and sex to narrow. This tendency was evident during both the downturn and recovery phases of the business cycle, an observation that suggests that the phenomenon is more than cyclical in nature. On its own this evidence does not indicate either an increase or decrease in structural unemployment.

However, it does suggest that if structural unemployment has increased it is most likely to have done so for those groups whose relative unemployment experience has deteriorated (i.e. adult males) and least likely to have worsened for those groups whose relative unemployment performance has improved (youths and adult females). Further investigation of structural unemployment requires going beyond the unemployment rate to look separately at the incidence and duration of unemployment.

Incidence and Duration of Unemployment by Age and Sex

As discussed in Part I of this paper, it is often very useful to distinguish between the incidence of unemployment -- the probability an individual faces of becoming unemployed -- and the duration of unemployment -- the length of time an individual remains unemployed. This distinction is particularly valuable in assessing the causes of unemployment. Indeed, unemployment duration is one of the main indicators of structural unemployment.

Although unemployment-vacancies relationships by age and sex cannot be constructed with available data (because the Help Wanted Index is not broken down in this fashion), it is possible to analyse the incidence and duration of unemployment for individual age and sex groups. As discussed in Part I, the duration measure which is available from the monthly Labour Force Survey is the length of spells currently in progress (incomplete spells). The incidence of unemployment is estimated from the available data on average duration and the unemployment rate, using the approximation that the unemployment rate is the product of incidence and duration.

The average duration of unemployment by age is summarized in Table 15 and illustrated in Figures 26

(Males), 27 (Females), and 28 (Both Sexes). The associated series on unemployment incidence are summarized in Table 16 and shown in Figures 29 (Males), 30 (Females), and 31 (Both Sexes). Several features stand out. First, the ranking of the duration of unemployment by age is the reverse of the unemployment rate ordering. Older workers, who have the lowest unemployment rate, experience the longest spells of unemployment while youths, whose unemployment rate substantially exceeds that of other age groups, experience the shortest unemployment spells. This is the case for both males and females. This observation implies that the relatively high youth unemployment rate is due to a higher incidence of unemployment, an implication that is confirmed by the data shown in Table 16. Similarly, the relatively low unemployment rate of older workers is attributable to the low probability these workers face of becoming unemployed.

A second important conclusion is that the average duration of unemployment has not returned to its pre-recession level for most groups. Two measures of the extent to which duration has risen during the 1980s are given. The bottom of Table 15 compares the 1990 level to the average level during the 1976-81 period, while Figure 33 plots the unemployment durations by age group using 1981 as the base year.

The increase in duration is especially pronounced for older workers whose average duration at the peak of the business cycle in 1990 remained 30% above that experienced over the 1976-81 period. Prime age workers also experienced a significant increase in duration (22%). The increase was similar for males (24% over all age groups) and females (19%). Only youths saw their 1990 unemployment durations fall below the pre-recession levels.

Examination of Figure 33 yields very similar conclusions. Beginning in 1981, duration rose sharply for all age groups. The subsequent decline began in 1983 for youths and 1985 for adults. By 1990 the duration of youth unemployment had returned to approximately its 1981 level, whereas that of adults remained about 50% above the 1981 level.

As discussed in Part I of the paper, the general rise in unemployment duration during the 1980s has been accompanied by a decline in the incidence of unemployment. Thus unemployment tends to be experienced by a smaller fraction of the population but lasts longer when it occurs. As Table 16 shows, this tendency for unemployment to be concentrated on a smaller subset of the population is especially pronounced for females whose unemployment incidence -- which was typically much higher than that of males prior to the 1980s -- has fallen to 75% of its pre-recession level -- and almost to the same level as males. In terms of age, incidence has fallen most among older workers, although this group experienced the largest and most prolonged increase in incidence during the 1980s and only in 1990 saw their unemployment incidence fall below its pre-recession level. Figure 32 summarizes the behavior of unemployment incidence by age.

In summary, most labour force participants experienced higher unemployment rates at the end of the 1980s than they had in the pre-recession 1976-81 period. This change can be attributed mainly to an increase in the duration of unemployment. Indeed, for most groups the likelihood of becoming unemployed was the same or lower than had been the case prior to the recession. The main exception to these statements is that of youths whose unemployment rate, duration of unemployment, and thus also incidence of unemployment had returned to approximately their pre-

recession levels when the economy reached the peak of the business cycle in 1990. The improvements in the relative unemployment performance of youths noted earlier in this paper can thus be attributed to a combination of worse outcomes for adults (mainly an increase in unemployment duration) and little change in the outcomes faced by young labour force participants.

As discussed in Part I, it is possible to estimate the completed spell lengths using unpublished gross flows data obtained from Statistics Canada. This was done as a check on this section's analysis based on the published incomplete spell length data. The results are provided in Appendix A. The conclusions reached with these data are similar to those discussed above.

Long Term Unemployment by Age and Sex

The analysis in the previous section focussed on the average duration of unemployment experienced by various age-sex groups. For some purposes it is useful to concentrate on the individuals experiencing the greatest difficulty in the labour market. Even if the average duration of unemployment is quite short, there may be an important minority who experience long spells of joblessness. This section briefly examines the relationship between the long term unemployment rate and the overall unemployment rate for the main age-sex groups. The main issue is whether the increase in average duration that has occurred for most groups has been accompanied by a shift toward a larger proportion of long term unemployment in total unemployment.

Two definitions of long term unemployment are employed: spells lasting longer than 26 weeks and spells lasting longer than 52 weeks. The evidence is presented in Figures

34 to 40. The first two plot the relation between the long term unemployment rate and the overall unemployment rate for males and females respectively using the 27+ weeks criterion, while the next two show the equivalent relationships using the 53+ weeks definition. The remaining diagrams plot this relation for three age groups using the 27+ weeks definition of long term unemployment. When it is possible to do so from published sources, the 1990 observation has been added.

All these plots show the basic tendency for long term unemployment to rise less quickly than unemployment in general during the downturn and to fall less rapidly than unemployment overall during the recovery. As discussed previously, this counter-clockwise pattern can be attributed to cyclical factors. Evidence of structural shifts will take the form of a change in the relationship at the same stage of the business cycle.

The evidence for males and females indicates that there has occurred little, if any, change in the relation between long term and total unemployment over this period. The amount of long term unemployment among males was about the same at the peak of the cycle in 1990 as during the previous cyclical high in 1981 (see Figures 34 and 36). For females there even appears to have been some decline during the 1980s in long term relative to total unemployment (Figures 35 and 37).

The evidence by age group is less conclusive, in large part because the 1990 observation is not available in this case. The youths relation shows no sign of having changed during the period. For adults, especially older workers, there is some indication of an increase in the proportion of long term unemployment up to 1989; however, the sharp drop

in 1990 in the unemployment rate of older workers (see Table 14) may affect this conclusion.

In summary, when one focuses on the amount of long term unemployment rather than the average duration of unemployment, there is little evidence of an increase in structural unemployment for individual age or sex groups -- as was also found in Part I for the total labour force. This is an important finding which indicates that the increase in average duration experienced by most labour force groups has taken place throughout the entire distribution of periods of unemployment rather than being concentrated in the spells of longer duration. It also suggests that those who experienced long spells of unemployment during the unusually severe recession of the 1980s were not `scarred' by this experience in the sense of becoming less likely to exit from unemployment. (The word `suggests' is chosen carefully here; a more complex and thorough analysis than was carried out here would be needed in order to carry out a convincing test of this `scarring effect' hypothesis.)

This evidence also indicates that the substantial rise in long term unemployment experienced in British Columbia during the 1980s was largely a cyclical phenomenon. Because of the unprecedented severity of the downturn, there was considerable uncertainty at the trough of the recession and especially during much of the subsequent recovery regarding the extent to which the rise in long term unemployment was temporary or likely to remain a more permanent feature of B.C.'s labour market. With the benefit of hindsight we can now conclude that the increase in the proportion of unemployment that is long term in nature appears to have been largely temporary. Nonetheless, there remains the tendency for bouts of unemployment to be longer than in the past -- a phenomenon which appears more permanent in nature.

Finally, it should be noted that this analysis was focussed on the narrow but important question of whether there occurred a change in the proportion of unemployment that is long term in nature relative to the experience of the late 1970s and early 1980s. This focus should not be taken to imply that the existing amount of long term unemployment is in any sense acceptable or that long duration unemployment should not be a policy concern. Rather, the issue addressed in this section is whether there occurred during the 1980s a shift in the proportion of unemployment that is long term in nature. Fortunately the answer appears to be no.

Education and Labour Market Outcomes

There is generally a strong relationship between educational attainment and individuals' earnings and employment opportunities. This section examines the extent to which educational attainment is related to employment, unemployment and labour force participation in British Columbia. We also look for evidence of a shift during the 1980s in the relationship between education level and these key labour market indicators.

As Table 17 and Figure 41 indicate, there are huge differences in unemployment rates across labour force groups with different levels of educational attainment. In general, unemployment falls sharply as the level of education rises. The unemployment rate of those with only elementary school is typically two to three times that of individuals with a university degree. The unemployment rate of those in the high school category is also very high.

A note on the high school category used in the Labour Force Survey is in order. Unfortunately, Statistics Canada has only recently begun to report labour market statistics

separately for high school graduates and those with incomplete high school. Thus the high school category used in this paper and elsewhere is both very large (about half the labour force) and heterogeneous. As an illustration of this heterogeneity, the 1990 unemployment rate of 10.2% reported for this category in Table 17 reflects a 7.5% unemployment rate of high school graduates and a rate of 14.3% for those with incomplete high school. Because of this heterogeneity, changes over time in key labour market indicators for this group may reflect changes in the composition of the group in addition to underlying changes common to most members of this category.

There are also large differences in labour force participation across groups with different levels of education (Figure 42). The largest gap is between those with elementary school education (only about 40% of whom participate in the labour force) and other categories. However, even for the remaining groups, the participation rate clearly rises with educational attainment.

For those with low levels of education, the combination of low participation and high unemployment implies a low employment rate, as the data illustrated in Figure 43 verify. The employment-population ratio rises with education level for all groups.

Although those with less education experience higher unemployment, the unemployment rates of all educational groups increased during the recession of 1982-83 and fell during the subsequent recovery. At the peak of the business cycle in 1990, all groups had higher unemployment rates than had been the case at the previous cyclical peak (1981) or on average during the pre-recession 1975-81 period. This is shown in Table 17 as well as in Figure 44 which plots unemployment rate indexes by educational attainment using

1981 as the base year. As these plots make clear, the extent to which unemployment increased did not bear any simple relation to educational attainment. In relative terms, unemployment rose by similar amounts for both the well and the poorly educated.

However, the unemployment rate does not (in this case) tell the whole story. As the series plotted in Figures 42 and 45 (the latter in index form using 1981 as the base year) indicate, the 1980s recession did have a differential impact on groups with different amounts of education -- an impact displayed in the behavior of labour force participation. In particular, labour force participation of those with elementary school education dropped sharply during the recession and then resumed its previous gradual downward trend during the rest of the decade. By the peak of the cycle in 1990, participation of this group was 90% of its 1981 level. Participation also declined, albeit to a lesser extent, for the high school education category -- to about 95% of its 1981 level, most of this decline occurring in 1990. In contrast, labour force participation of the three more educated groups was the same or higher in 1990 as in 1981. Similar behavior is exhibited in the employment rate, as is shown in Figures 43 and 46.

This evidence indicates that individuals with low levels of education fared less well than did other groups during the 1980s. However, many of these individuals responded to reduced employment opportunities by withdrawing from the labour force. Thus the extent of labour force participation among those with elementary school education -- which was already very low and trending downwards over time -- dropped sharply during the recession. Because low levels of education and age are highly correlated, much of this decline may have taken the form of early retirement, albeit possibly earlier than was either planned or desired.

Summary and Conclusions

The purpose of Part II was to examine the manner in which the main labour market developments of the 1980s affected different regions and groups of individuals in British Columbia. Conclusions have been given in each section; thus our summary here can be brief.

It is clear that there was a good deal of similarity in the way in which different regions were affected by the key events of the 1980s -- the deep recession and the prolonged period of recovery and growth. This statement also applies to individuals who differ by age, gender and educational attainment. In a sense few regions or groups were spared from the adverse effects of the downturn and few did not benefit from the recovery.

Nonetheless, there were also important differences in behavior across regions and groups. The diversity in employment decline and growth across regions was very large -- both in terms of the negative impact during the downturn and the extent to which employment growth returned to its previous trend during the recovery. Despite this substantial diversity in employment opportunities, significant changes across regions in relative unemployment rates did not emerge. This outcome suggests that there is a reasonably high degree of regional labour mobility in B.C.

Although all groups were affected by the ups and downs in economic activity experienced during the 1980s, some fared relatively better than others. In particular, adult males (especially older males) and the poorly educated were more adversely affected by the 1980s' harsh economic climate than were youths, females and the well educated.

TABLE 5

EMPLOYMENT GROWTH BY REGION, B.C., 1975-90

REGION	TREND GROWTH RATE (PERCENT PER YEAR) 1975-81	1981-82	1982-90	1981-82 CHANGE RELATIVE TO 1975-81 TREND	1982-90 TREND RELATIVE TO 1975-81
EAST KOOTENAY	-1.0	-15.7	-3.0	-14.7	-2.0
WEST KOOTENAY	-0.6	-0.6	1.3	0.0	1.9
OKANAGAN-KOOTENAY BOUNDARY	9.3	-5.1	2.1	-14.4	-7.2
LILLOOET-THOMPSON	9.2	-7.4	0.7	-16.6	-8.5
LOWER MAINLAND	2.9	-3.6	3.0	-6.5	0.1
VANCOUVER ISLAND	3.5	-7.0	2.9	-10.5	-0.6
CARIBOO-FT. GEORGE	9.8	-13.4	1.6	-23.2	-8.2
PEACE RIVER-LIARD SKEENA-STIKINE	2.1	-10.3	5.6	-12.4	3.5
BRITISH COLUMBIA	3.8	-5.5	2.7	-9.3	-1.1

Source: calculated from data in Statistics Canada, The Labour Force, various issues, and Labour Force Annual Averages 1990.

TABLE 6

LABOUR FORCE PARTICIPATION BY REGION, B.C., 1975-90

REGION	LABOUR FORCE PARTICIPATION RATE 1975	1980	1981	1982	1984	1989	1990
EAST KOOTENAY	63.9 (3)	71.1 (3)	66.0 (5)	66.5 (3)	68.0 (3)	70.2 (3)	66.6 (4)
WEST KOOTENAY	55.0 (7)	58.3 (7)	60.1 (7)	56.6 (7)	59.2 (7)	61.0 (7)	64.1 (5)
OKANAGAN-KOOTENAY BOUNDARY	50.0 (8)	54.8 (8)	57.9 (8)	55.5 (8)	58.4 (8)	60.3 (8)	58.9 (8)
LILLOOET-THOMPSON	60.6 (5)	67.5 (4)	67.7 (3)	65.4 (5)	63.2 (5)	64.4 (5)	64.0 (6)
LOWER MAINLAND	62.8 (4)	65.2 (5)	66.1 (4)	66.4 (4)	65.2 (4)	67.9 (4)	67.3 (3)
VANCOUVER ISLAND	57.1 (6)	60.8 (6)	61.8 (6)	60.5 (6)	60.9 (6)	63.9 (6)	62.7 (7)
CARIBOO-FT. GEORGE	69.5 (1)	71.2 (2)	70.8 (2)	68.2 (2)	69.9 (2)	72.9 (1)	72.6 (1)
PEACE RIVER-LIARD SKEENA-STIKINE	69.1 (2)	71.7 (1)	76.2 (1)	72.2 (1)	71.3 (1)	72.8 (2)	72.2 (2)
BRITISH COLUMBIA	61.1	64.1	65.1	64.3	64.1	66.8	66.0
RANGE	19.5	16.9	18.3	16.7	12.9	12.6	13.7

Notes: Number in parentheses below each participation rate is its rank order from highest to lowest in that year.

Source: Statistics Canada The Labour Force, various issues, and Labour Force Annual Averages 1990.

TABLE 7

EMPLOYMENT-POPULATION RATIOS BY REGION, B.C., 1975-90

REGION	EMPLOYMENT-POPULATION RATIO 1975	1980	1981	1982	1984	1989	1990
EAST KOOTENAY	58.8 (3)	66.4 (2)	62.3 (4)	59.7 (2)	58.4 (2/3)	64.2 (3)	59.7 (4)
WEST KOOTENAY	49.4 (7)	52.7 (7)	53.7 (7)	48.6 (8)	48.4 (8)	52.5 (7)	57.5 (5)
OKANAGAN-KOOTENAY BOUNDARY	45.1 (8)	50.0 (8)	53.3 (8)	48.7 (7)	49.7 (7)	52.4 (8)	52.2 (8)
LILLOOET-THOMPSON	53.2 (5)	61.6 (4/5)	60.7 (5)	54.0 (5)	52.0 (5)	56.3 (6)	56.4 (7)
LOWER MAINLAND	58.0 (4)	61.6 (4/5)	62.5 (3)	59.4 (3)	56.0 (4)	62.7 (4)	62.5 (3)
VANCOUVER ISLAND	51.9 (6)	55.2 (6)	56.4 (6)	52.3 (6)	51.2 (6)	57.6 (5)	57.2 (6)
CARIBOO-FT. GEORGE	63.1 (1)	65.9 (3)	65.2 (2)	56.0 (4)	58.4 (2/3)	65.0 (2)	65.2 (2)
PEACE RIVER-LIARD SKEENA-STIKINE	62.4 (2)	67.7 (1)	71.2 (1)	64.3 (1)	62.2 (1)	65.7 (1)	65.4 (1)
BRITISH COLUMBIA	55.9	59.8	60.7	56.5	54.7	60.7	60.6
RANGE	18.0	17.7	17.9	15.7	13.8	13.3	13.2

Notes: Number in parentheses below each employment rate is its rank order from highest to lowest in that year. Ties are indicated as follows: (2/3).

Source: Statistics Canada The Labour Force, various issues, and Labour Force Annual Averages 1990.

TABLE 8

UNEMPLOYMENT RATES BY REGION, B.C., 1975-90

REGION	UNEMPLOYMENT RATE 1975	1980	1981	1982	1984	1989	1990
EAST KOOTENAY	8.9	6.8	6.6	15.2	15.8	n.a.	n.a.
WEST KOOTENAY	10.7 (6)	9.3 (7)	11.0 (7)	14.9 (5)	19.0 (7)	13.7 (7)	10.3 (5)
OKANAGAN-KOOTENAY BOUNDARY	10.3 (5)	8.7 (4)	7.9 (4)	12.6 (2)	14.4 (3)	13.4 (6)	11.3 (6)
LILLOOET-THOMPSON	12.1 (7)	9.0 (5/6)	10.6 (6)	17.2 (6)	17.6 (6)	12.5 (5)	11.8 (7)
LOWER MAINLAND	7.7 (1)	5.6 (2)	5.2 (1)	10.4 (1)	13.9 (2)	7.7 (1)	7.1 (1)
VANCOUVER ISLAND	9.4 (2/3)	9.0 (5/6)	9.0 (5)	13.8 (4)	16.1 (4)	9.9 (2)	8.7 (2)
CARIBOO-FT. GEORGE	9.4 (2/3)	7.6 (3)	7.7 (3)	18.2 (7)	16.3 (5)	10.6 (4)	10.1 (4)
PEACE RIVER-LIARD SKEENA-STIKINE	10.2 (4)	5.4 (1)	7.2 (2)	13.2 (3)	12.4 (1)	10.1 (3)	9.3 (3)
BRITISH COLUMBIA	8.5	6.8	6.7	12.1	14.7	9.1	8.3
RANGE	4.4	3.9	5.8	7.8	5.2	6.0	4.7

Notes: n.a. means 'not available' due to data unreliability. Number in parentheses below each unemployment rate is its rank is its rank order from lowest to highest in that year. East Kootenay is omitted from ranking because data are not available in all years.

Source: Statistics Canada The Labour Force, various issues, and Labour Force Annual Averages 1990.

TABLE 9

SOURCE POPULATION GROWTH RATES BY AGE AND SEX
BRITISH COLUMBIA 1976 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS	65+ YRS
1976	2.3	2.1	2.4	1.8	2.9	1.7	3.1
1977	2.2	2.1	2.3	1.1	3.1	1.4	3.1
1978	2.5	2.4	2.6	1.5	3.6	1.2	3.8
1979	2.7	2.6	2.8	1.3	4.0	1.4	4.0
1980	3.5	3.4	3.5	1.5	5.3	1.8	4.7
1981	3.1	3.0	3.1	0.8	4.8	2.1	3.7
1982	1.7	1.5	1.8	-1.9	3.3	1.3	3.2
1983	1.1	1.0	1.2	-2.6	2.6	1.5	2.4
1984	1.3	1.2	1.5	-2.0	2.4	1.3	2.7
1985	1.1	0.9	1.1	-2.5	2.0	0.9	3.9
1986	1.0	0.9	1.2	-2.1	1.5	1.1	3.8
1987	1.5	1.5	1.6	-1.4	1.9	1.4	4.3
1988	2.1	2.1	2.1	-1.0	2.3	2.6	4.0
1989	2.5	2.4	2.5	-0.2	2.8	2.9	4.2
1990	2.6	2.5	2.6	0.0	3.0	3.0	3.5
Average annual rates of growth:							
(a) British Columbia							
1975-81	2.7	2.6	2.8	1.3	4.0	1.6	3.7
1982-90	1.6	1.6	1.7	-1.5	2.3	1.8	3.6
(b) Canada							
1975-81	2.0	1.9	2.0	0.9	2.9	1.2	3.1
1982-90	1.2	1.1	1.2	-2.2	2.3	1.2	2.9

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 10

LABOUR FORCE GROWTH RATES BY AGE AND SEX
BRITISH COLUMBIA 1976-90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS	65+ YRS
1976	2.8	2.1	3.7	0.0	4.5	2.0	-5.6
1977	2.8	2.7	3.1	3.1	3.2	1.7	5.9
1978	4.7	2.5	8.3	2.7	7.3	3.9	-11.1
1979	3.1	2.7	3.6	4.2	3.8	-0.3	18.8
1980	5.0	4.5	5.7	3.7	6.2	3.5	15.8
1981	4.6	2.7	7.6	2.4	6.6	4.0	-9.1
1982	0.4	-0.6	2.0	-5.6	4.1	-0.3	0.0
1983	1.0	0.6	1.4	-3.7	2.6	2.3	-5.0
1984	1.2	0.1	2.6	-2.9	3.4	0.6	-10.5
1985	1.7	0.9	2.9	-1.3	2.9	1.7	5.9
1986	2.2	1.8	2.6	1.0	2.7	1.7	11.1
1987	2.1	1.4	3.1	0.0	3.3	2.2	-5.0
1988	2.2	1.0	3.9	-1.3	2.8	3.5	0.0
1989	4.2	3.3	5.3	4.1	3.9	5.7	-10.5
1990	1.4	0.5	2.7	-3.0	2.9	0.1	2.6
Average annual rates of growth:							
(a) British Columbia:							
1975-81	3.7	2.8	5.2	2.6	5.1	2.4	1.8
1982-90	2.0	1.2	3.0	-0.9	3.0	2.3	1.2
(b) Canada:							
1975-81	2.9	1.9	4.6	2.2	4.2	1.7	-0.9
1982-90	1.7	0.9	2.7	-1.6	3.2	1.6	0.6

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 11

EMPLOYMENT GROWTH RATES BY AGE AND SEX
BRITISH COLUMBIA 1976 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS	65+ YRS
1976	2.6	2.7	2.4	-0.8	4.9	2.2	-5.9
1977	2.8	2.8	2.9	3.2	3.6	1.4	12.5
1978	5.0	2.6	9.3	3.5	7.0	4.2	-16.7
1979	3.8	3.5	4.0	5.7	4.4	0.0	20.0
1980	5.9	5.4	7.0	5.4	7.0	4.3	16.7
1981	4.7	2.4	8.2	2.7	6.2	4.5	-4.8
1982	-5.4	-7.4	-2.3	-16.2	-0.5	-4.9	-5.0
1983	-1.0	-1.9	0.2	-6.3	0.2	1.6	-5.3
1984	0.1	-0.9	1.4	-1.7	1.6	-1.3	-5.6
1985	2.4	2.2	2.6	0.9	3.3	1.6	5.9
1986	4.1	4.2	4.2	2.6	4.9	3.5	11.1
1987	2.8	2.5	3.3	1.2	3.8	2.1	-10.0
1988	4.1	2.8	5.5	2.5	4.5	4.2	5.6
1989	5.7	4.6	6.9	7.2	5.3	6.6	-10.5
1990	2.3	1.1	4.2	-3.0	3.2	3.2	25.7
Average annual rates of growth:							
(a) British Columbia:							
1975-81	4.1	3.2	5.5	3.2	5.3	2.7	2.7
1982-90	2.5	1.8	3.4	0.3	3.3	2.6	2.5
(b) Canada:							
1975-81	2.8	1.7	4.6	1.9	4.1	1.7	-0.3
1982-90	2.1	1.4	3.1	-0.7	3.3	1.8	0.7

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 12

LABOUR FORCE PARTICIPATION RATES BY AGE AND SEX
BRITISH COLUMBIA 1975 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS	65+ YRS
1975	61.1	77.2	45.2	66.1	75.2	61.7	8.0
1976	61.3	77.2	45.8	65.2	76.4	62.0	7.5
1977	61.7	77.6	46.1	66.4	76.5	62.2	7.8
1978	63.0	77.7	48.7	67.1	79.1	63.7	6.5
1979	63.2	77.8	49.0	69.1	78.8	62.8	7.5
1980	64.1	78.6	50.1	70.6	79.5	63.7	8.3
1981	65.1	78.3	52.3	71.8	80.7	64.9	7.3
1982	64.3	76.6	52.4	68.9	81.3	63.8	7.2
1983	64.2	76.3	52.5	68.1	81.4	64.4	6.4
1984	64.1	75.5	53.1	67.6	82.1	63.9	5.8
1985	64.5	75.4	54.0	68.3	82.8	64.5	5.9
1986	65.2	76.1	54.8	70.5	83.8	64.8	6.2
1987	65.6	76.1	55.6	71.4	84.8	65.3	5.7
1988	65.7	75.2	56.5	71.2	85.1	65.8	5.5
1989	66.8	75.9	58.1	74.3	86.1	67.6	4.8
1990	66.0	74.3	58.1	71.9	85.9	66.1	5.9
Average participation rates:							
(a) British Columbia:							
1975-81	62.8	77.8	48.2	68.0	78.0	63.0	7.6
1982-90	65.2	75.7	55.0	70.2	83.7	65.1	5.9
(b) Canada:							
1975-81	62.7	78.2	52.1	64.9	76.9	63.6	9.4
1982-90	65.7	76.6	55.3	68.0	83.2	64.7	7.5

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 13

EMPLOYMENT-POPULATION RATIOS BY AGE AND SEX
BRITISH COLUMBIA 1975 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS
1975	55.9	71.1	41.0	56.7	70.1	58.2
1976	56.0	71.4	41.0	55.3	71.4	58.5
1977	56.4	71.9	41.3	56.4	71.5	58.5
1978	57.8	72.0	43.9	57.5	73.9	60.1
1979	58.4	72.7	44.4	60.1	74.0	59.5
1980	59.8	74.1	45.9	62.3	75.2	60.8
1981	60.7	73.6	48.2	63.5	76.1	62.3
1982	56.5	67.1	46.3	54.2	73.3	58.4
1983	55.4	65.3	45.8	52.1	71.6	58.5
1984	54.7	63.9	45.8	52.3	70.9	57.0
1985	55.4	64.7	46.5	53.9	72.0	57.4
1986	57.1	66.8	47.8	56.6	74.3	58.7
1987	57.8	67.4	48.6	58.3	75.6	59.2
1988	58.9	67.9	50.3	60.1	77.2	60.0
1989	60.7	69.3	52.5	64.5	79.0	62.1
1990	60.6	68.3	53.2	62.5	79.1	62.2
Average employment-population ratios:						
(a) British Columbia:						
1975-81	57.9	72.4	43.7	58.8	73.2	59.7
1982-90	57.5	66.7	48.5	57.2	74.8	59.3
(b) Canada:						
1975-81	58.0	72.8	43.6	56.2	72.3	60.6
1982-90	59.4	69.3	50.0	57.7	76.0	60.4

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 14

UNEMPLOYMENT RATES BY AGE AND SEX
BRITISH COLUMBIA, 1975 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45-64 YRS
1975	8.5	8.0	9.4	14.4	6.9	5.6
1976	8.6	7.5	10.5	15.3	6.7	5.8
1977	8.5	7.3	10.5	15.2	6.5	6.0
1978	8.3	7.4	9.7	14.4	6.6	5.6
1979	7.7	6.6	9.4	13.2	6.1	5.3
1980	6.8	5.7	8.5	11.8	5.4	4.6
1981	6.7	6.1	7.7	11.6	5.8	4.0
1982	12.1	12.4	11.7	21.3	9.9	8.4
1983	13.8	14.5	12.8	23.4	12.1	9.2
1984	14.7	15.4	13.8	22.7	13.6	10.8
1985	14.1	14.2	14.0	21.1	13.1	11.0
1986	12.5	12.2	12.8	19.7	11.4	9.4
1987	11.9	11.5	12.6	18.5	10.9	9.3
1988	10.4	9.8	11.1	15.5	9.3	8.8
1989	9.1	8.7	9.6	13.2	8.2	8.1
1990	8.3	8.2	8.4	13.0	7.9	5.9
Average unemployment rates:						
(a) British Columbia:						
1975-81	7.9	6.9	9.4	13.7	6.3	5.3
1982-90	11.9	11.9	11.9	18.7	10.7	9.0
(b) Canada:						
1975-81	7.6	6.8	8.7	13.3	6.0	4.7
1982-90	9.6	9.5	7.8	15.4	8.7	6.8

Notes: Growth rates are percentage changes from the previous year to the year indicated. All growth rates are measured as differences in logarithms.

Sources: Statistics Canada The Labour Force, various issues and Labour Force Annual Averages 1990 (Feb. 1991).

TABLE 15

AVERAGE DURATION OF UNEMPLOYMENT BY AGE AND SEX,
BRITISH COLUMBIA 1976 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45+ YRS
1976	13.4	14.2	12.6	11.3	13.7	18.3
1977	13.4	13.0	13.9	11.8	12.9	18.5
1978	13.9	13.8	14.1	11.9	14.8	18.3
1979	14.3	15.2	13.2	11.6	14.7	20.0
1980	13.2	13.5	12.8	10.0	14.4	18.7
1981	11.2	11.4	11.0	9.8	11.2	15.7
1982	16.0	16.2	15.7	14.1	16.1	20.1
1983	22.0	23.8	19.2	19.7	22.4	25.9
1984	23.6	25.2	21.3	18.2	24.5	31.2
1985	25.3	27.4	22.5	18.0	26.0	35.3
1986	22.7	24.3	20.6	16.8	23.3	31.0
1987	22.8	24.5	20.8	16.2	23.7	30.8
1988	19.6	20.8	18.3	12.3	20.7	27.1
1989	18.3	19.5	16.9	11.2	19.8	23.8
1990	16.1	16.7	15.4	10.4	16.6	23.7
AVERAGE 1976-81	13.2	13.5	12.9	11.1	13.6	18.3
1990 LEVEL RELATIVE TO 1976-81 AVERAGE	1.22	1.24	1.19	0.94	1.22	1.30

Notes: Average duration is the average length (in weeks) of unemployment in progress at the survey date.

Sources: Special tabulations by Statistics Canada from the Labour Force Survey.

TABLE 16

INCIDENCE OF UNEMPLOYMENT BY AGE AND SEX,
BRITISH COLUMBIA 1976 - 90

YEAR	TOTAL	MALES	FEMALES	15-24 YRS	25-44 YRS	45+ YRS
1976	33.4	27.3	43.4	70.2	25.2	16.4
1977	33.2	29.4	39.3	66.8	26.1	16.9
1978	30.9	27.7	35.8	62.9	23.1	16.0
1979	27.8	22.5	36.8	59.3	21.4	13.9
1980	26.7	21.8	34.4	61.6	19.4	12.8
1981	31.1	27.6	36.3	61.6	26.7	13.2
1982	39.3	39.8	38.8	78.4	32.0	21.8
1983	32.6	31.6	34.7	61.9	28.1	18.5
1984	32.5	31.9	33.7	64.7	28.9	18.0
1985	29.1	27.0	32.3	61.1	26.3	16.1
1986	28.6	26.2	32.4	61.0	25.4	15.8
1987	27.2	24.3	31.4	59.4	23.8	15.7
1988	27.5	24.5	31.5	65.7	23.4	17.0
1989	25.9	23.1	29.6	61.4	21.6	17.7
1990	26.7	25.5	28.2	65.6	24.8	12.8
AVERAGE 1976-81	30.5	26.1	37.7	63.7	23.7	14.9
1990 LEVEL RELATIVE TO 1976-81 AVERAGE	0.88	0.98	0.75	1.03	1.05	0.86

Notes: Incidence is estimated using the approximation that the unemployment rate is the product of incidence and duration.

Sources: Special tabulations by Statistics Canada from the Labour Force Survey.

TABLE 17

UNEMPLOYMENT RATES BY EDUCATIONAL ATTAINMENT
BRITISH COLUMBIA 1975 - 90

YEAR	ELEMENTARY SCHOOL (0-8 YRS)	HIGH SCHOOL	SOME POST-SECONDARY	POST-SECONDARY CERTIFICATE OR DIPLOMA	UNIVERSITY DEGREE
1975	11.1	10.0	8.2	5.0	3.3
1976	9.9	9.9	7.1	6.5	4.1
1977	10.2	10.1	7.4	5.5	3.4
1978	9.8	9.3	7.9	5.8	4.0
1979	8.9	8.8	6.3	5.1	4.3
1980	8.9	7.6	5.7	4.4	3.9
1981	8.5	7.7	6.0	4.7	2.9
1982	16.0	14.2	9.8	8.5	5.7
1983	15.2	15.8	14.0	10.7	6.5
1984	18.7	16.7	14.3	11.7	7.4
1985	20.2	15.8	13.7	10.5	7.7
1986	17.7	14.9	10.5	8.8	6.0
1987	17.7	14.2	10.8	7.6	5.8
1988	13.9	12.3	9.3	8.1	4.8
1989	16.9	10.3	8.5	6.2	4.9
1990	11.4	10.2	8.6	6.4	4.2
AVERAGE 1975-81	9.6	9.1	6.9	5.3	3.7
1990 LEVEL RELATIVE TO 1975-81 AVERAGE	1.19	1.13	1.24	1.21	1.14
1990 RELATIVE TO 1981	1.34	1.32	1.43	1.36	1.45

Notes: The High School category includes both high school graduates and non-graduates with some high school education. The Post-Secondary Certificate category includes trade certificates.

Source: Statistics Canada The Labour Force various issues.

Figure 20(a)

Unemployment Rate by Economic Region: Regions 910 (East Kootenay), 920 (West Kootenay), 930 (Okanagan-Kootenay) and 940 (Lillooet-Thompson).

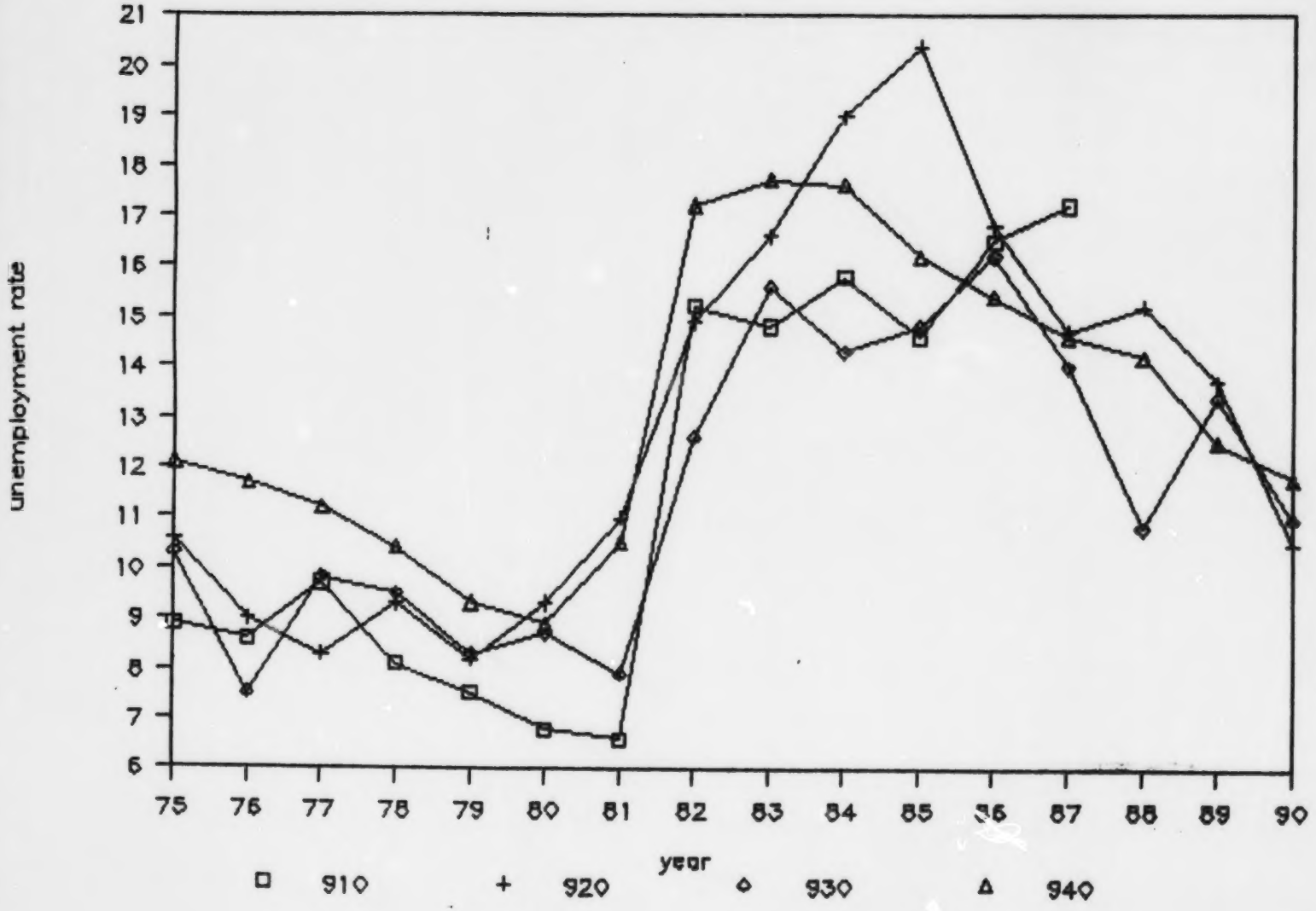


Fig 20(b)

Unemployment Rate by Economic Region: Regions 950 (Lower Mainland), 960 (Vancouver Island), 970 (Cariboo) and 980/990 (Peace and Central Coast)

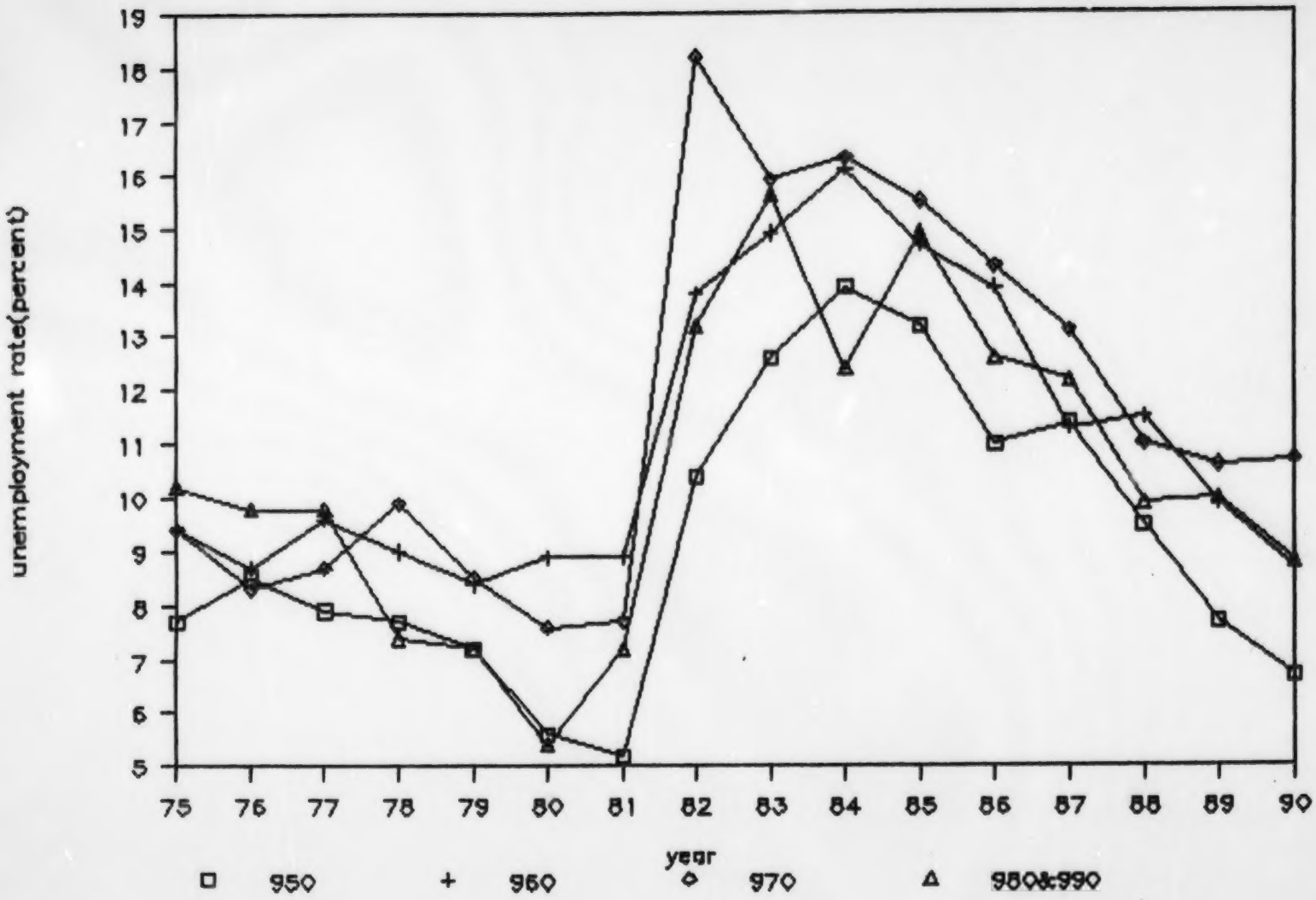


Figure 21 Unemployment Rate

B.C. Males 1975-90

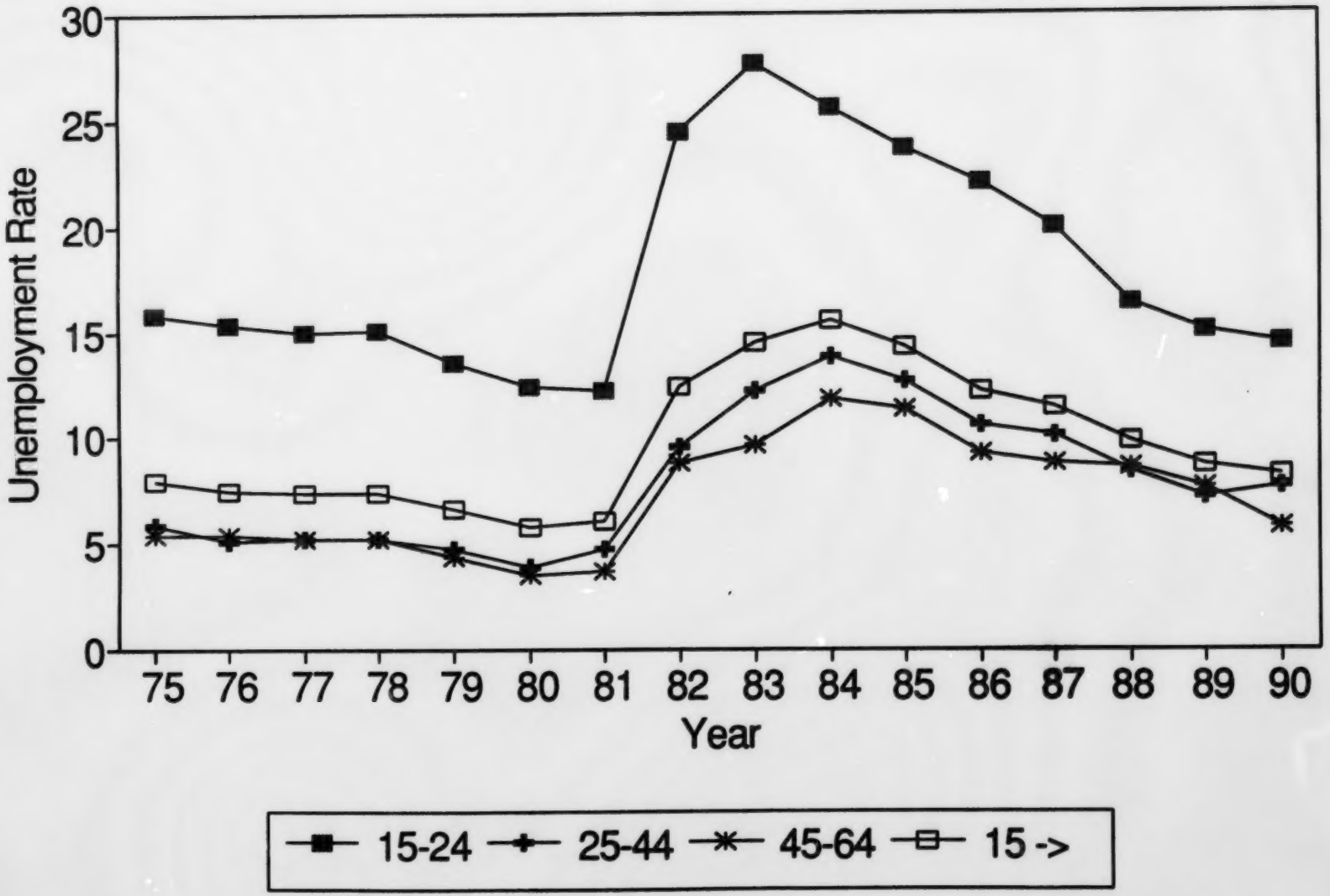


Figure 22 Unemployment Rate

B.C. Females 1975-90

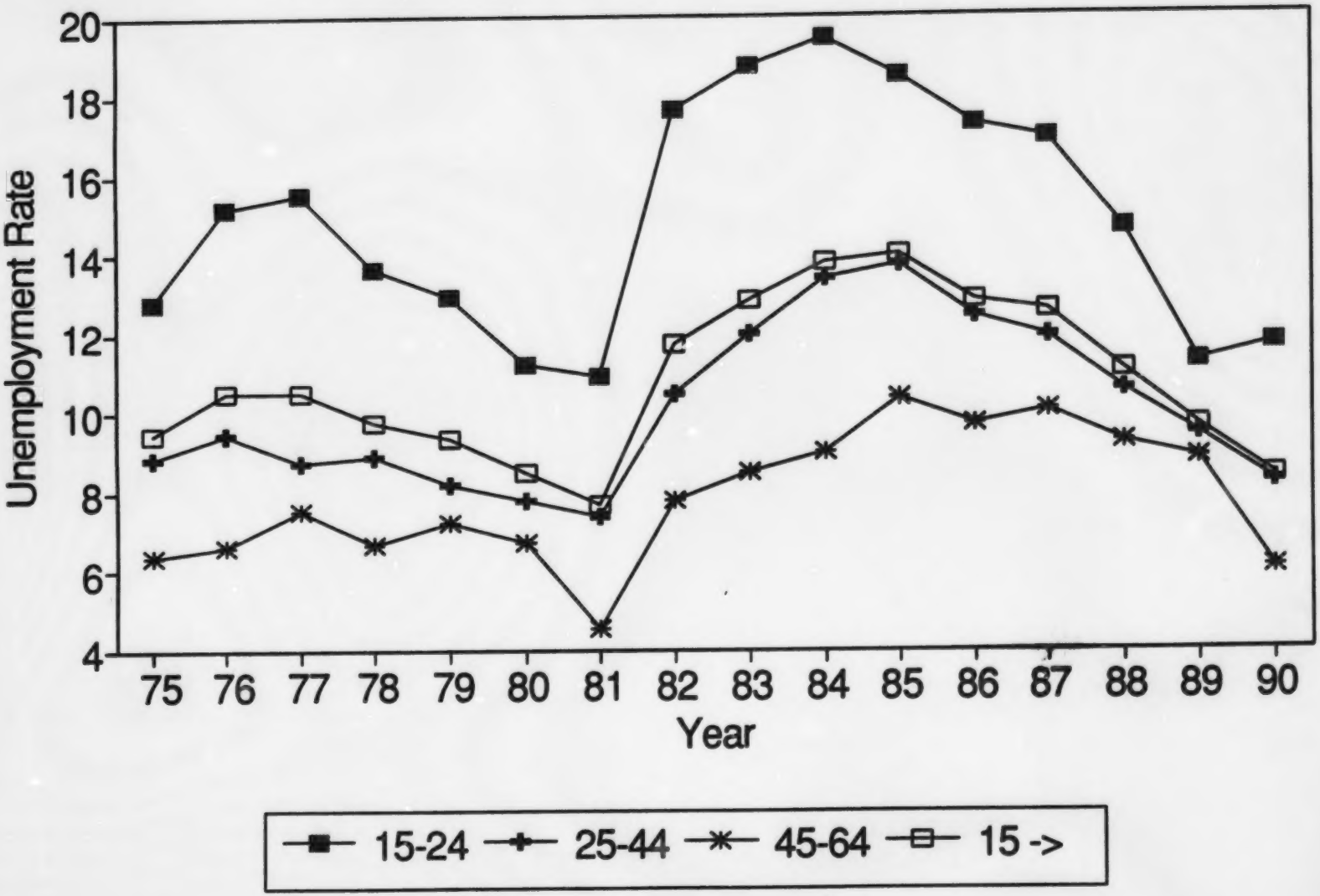


Figure 23 Unemployment Rate

B.C. Males and Females 1975-90

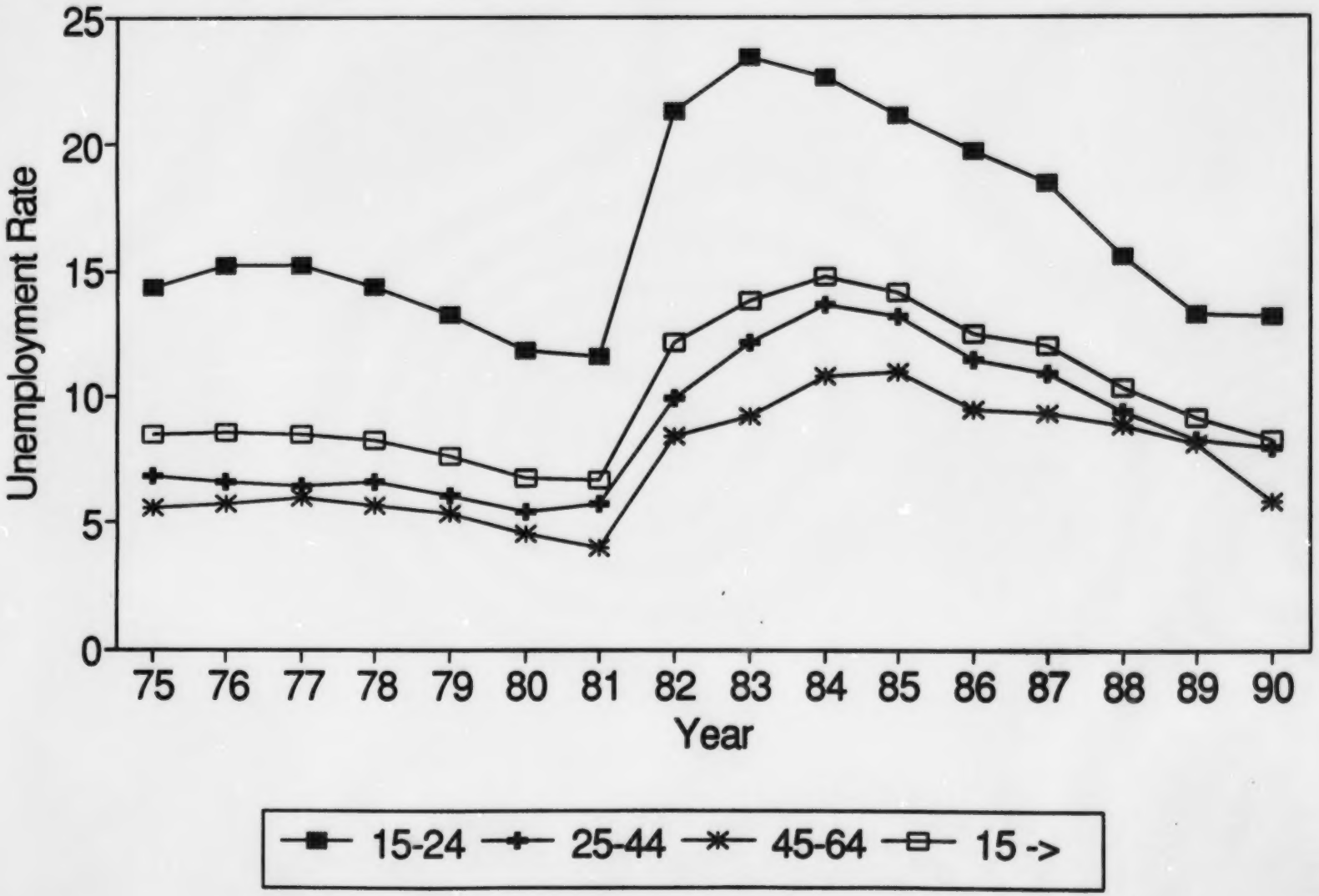


Fig.24 Unemployment Rate Ratio

B.C. Youths/Adults 1975-90

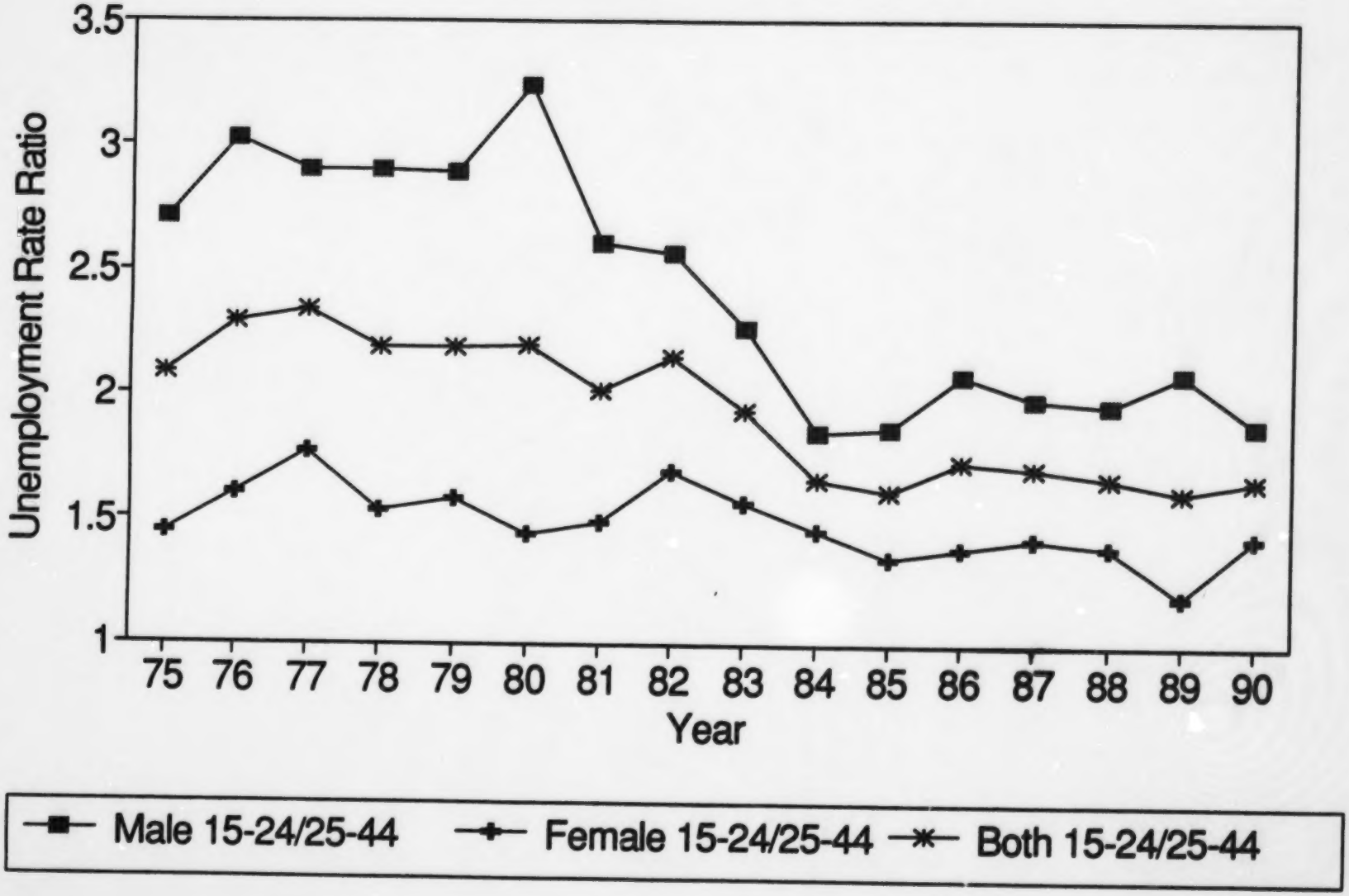


Fig.25 Unemployment Rate Ratio

B.C. Females/Males 1975-90

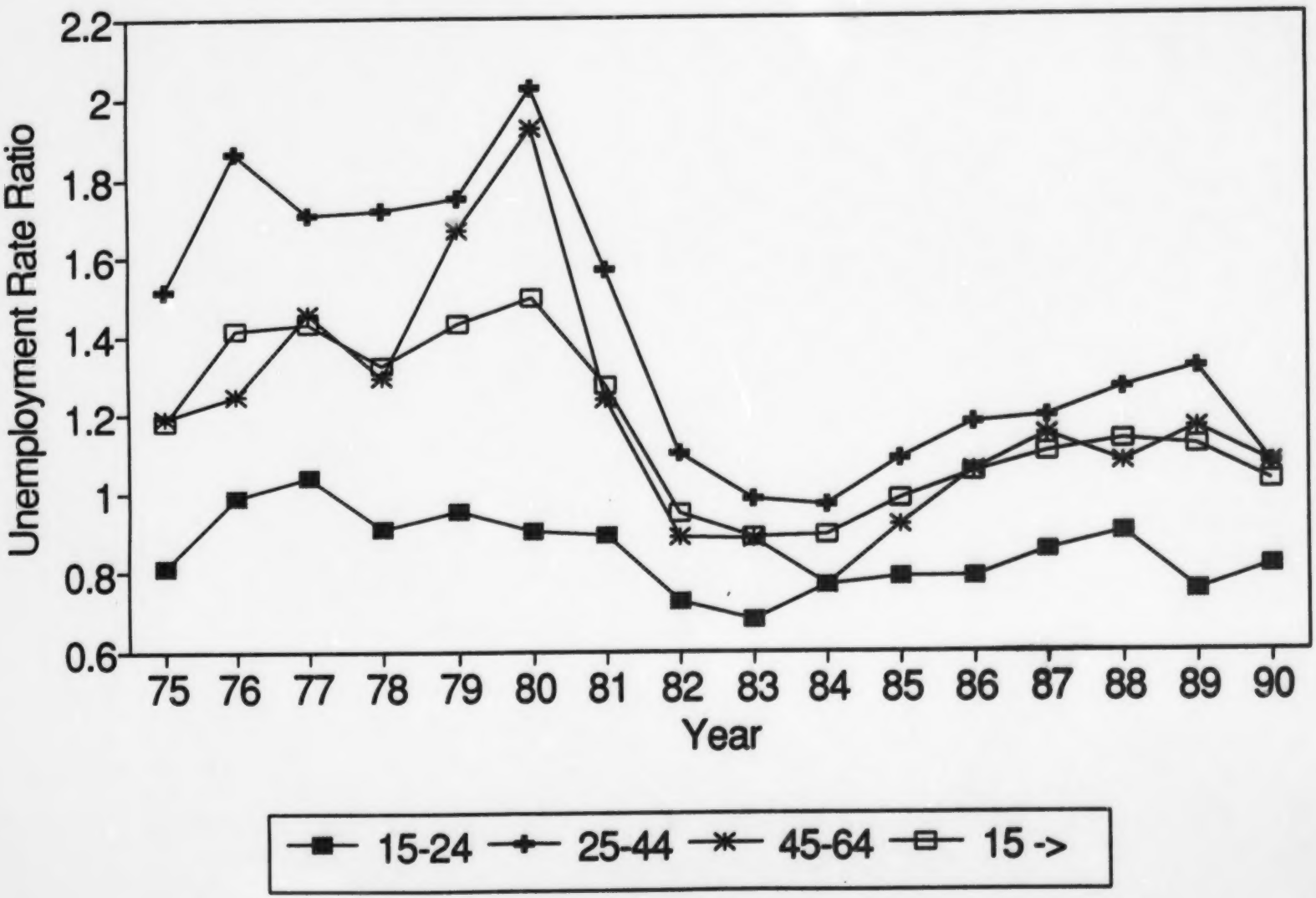


Fig.26 Ave.Duration of Unem

B.C. Males 1976-90

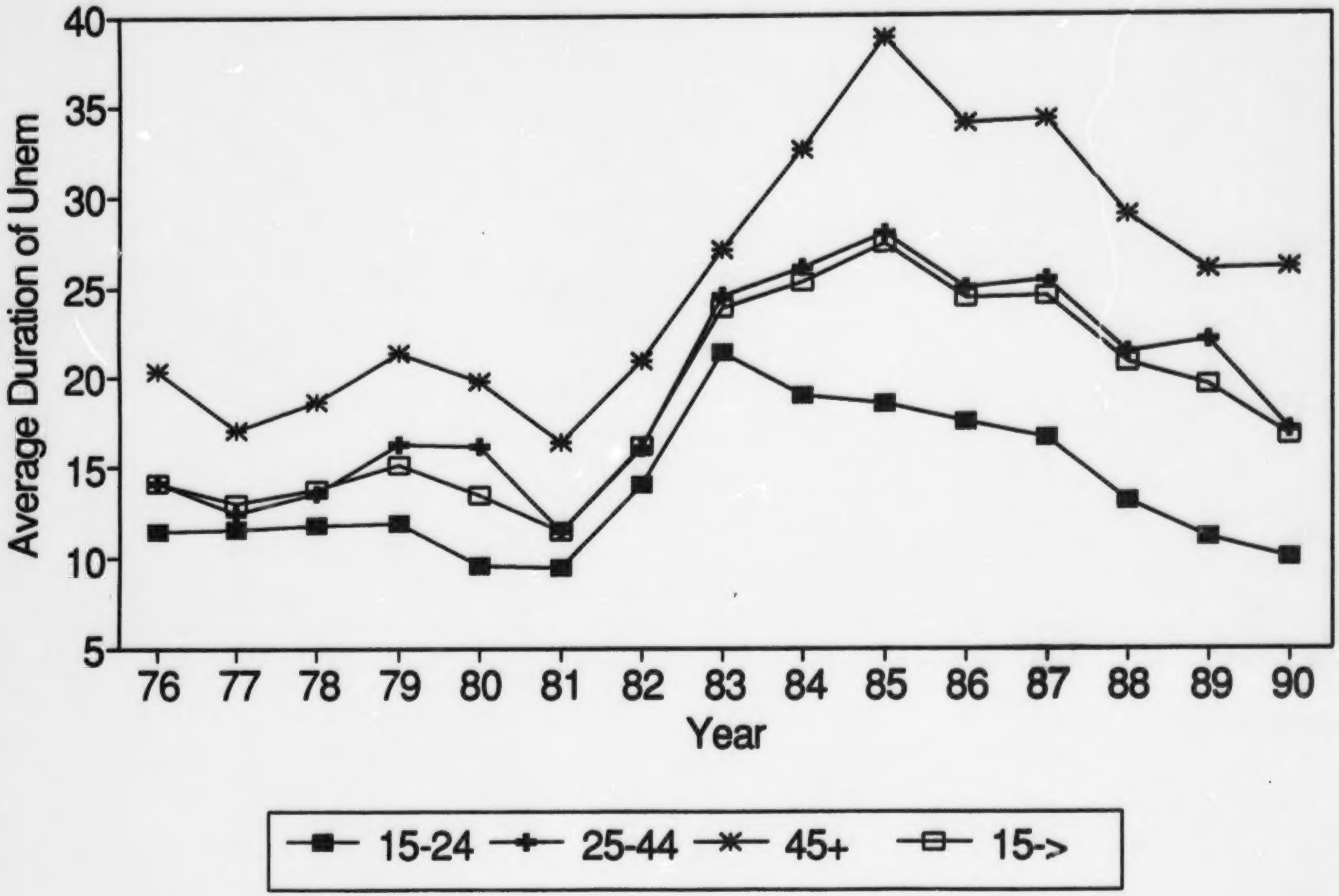


Fig.27 Ave.Duration of Unem

B.C. Females 1976-90

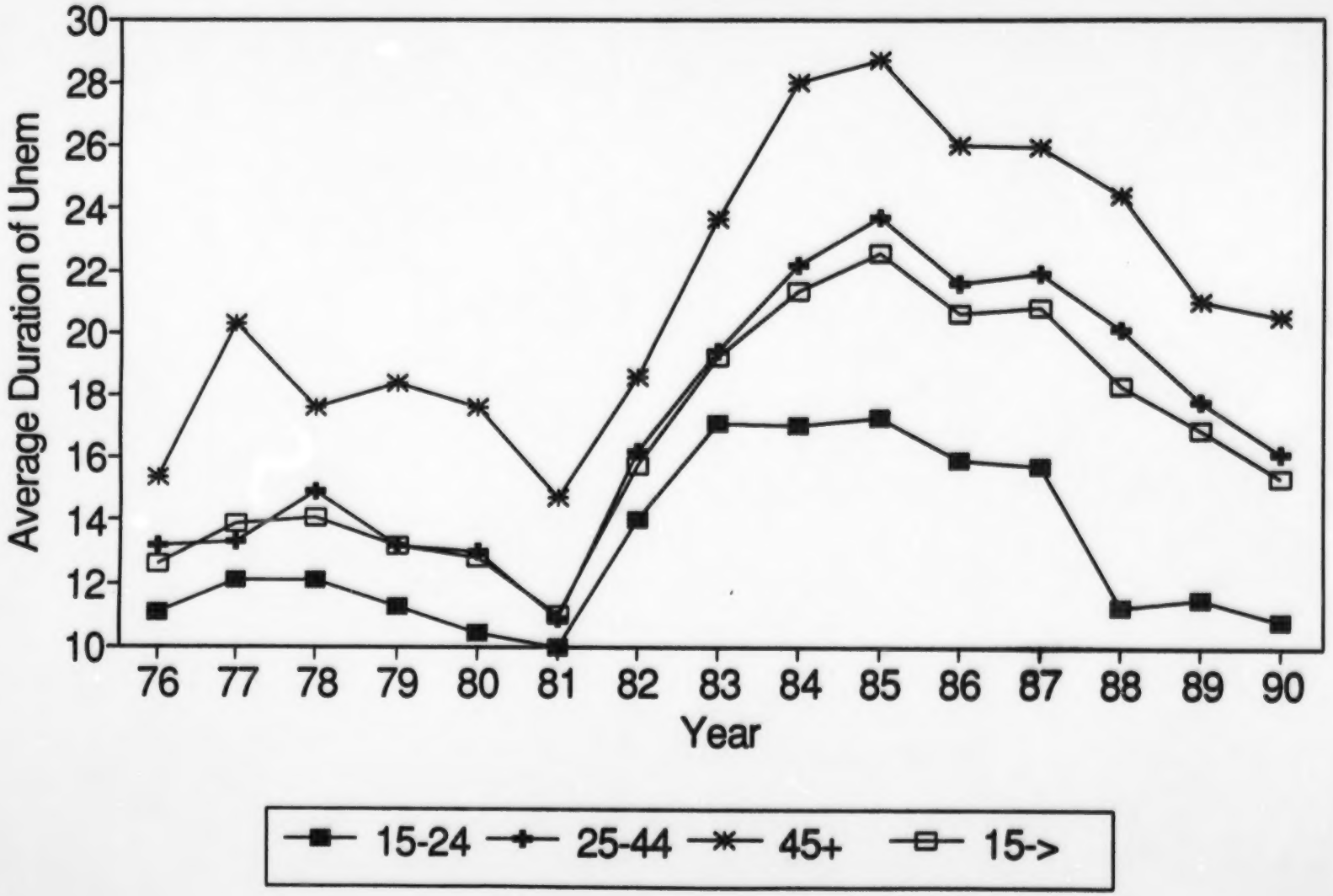


Fig.28 Ave.Duration of Unem

B.C. Males and Females 1976-90

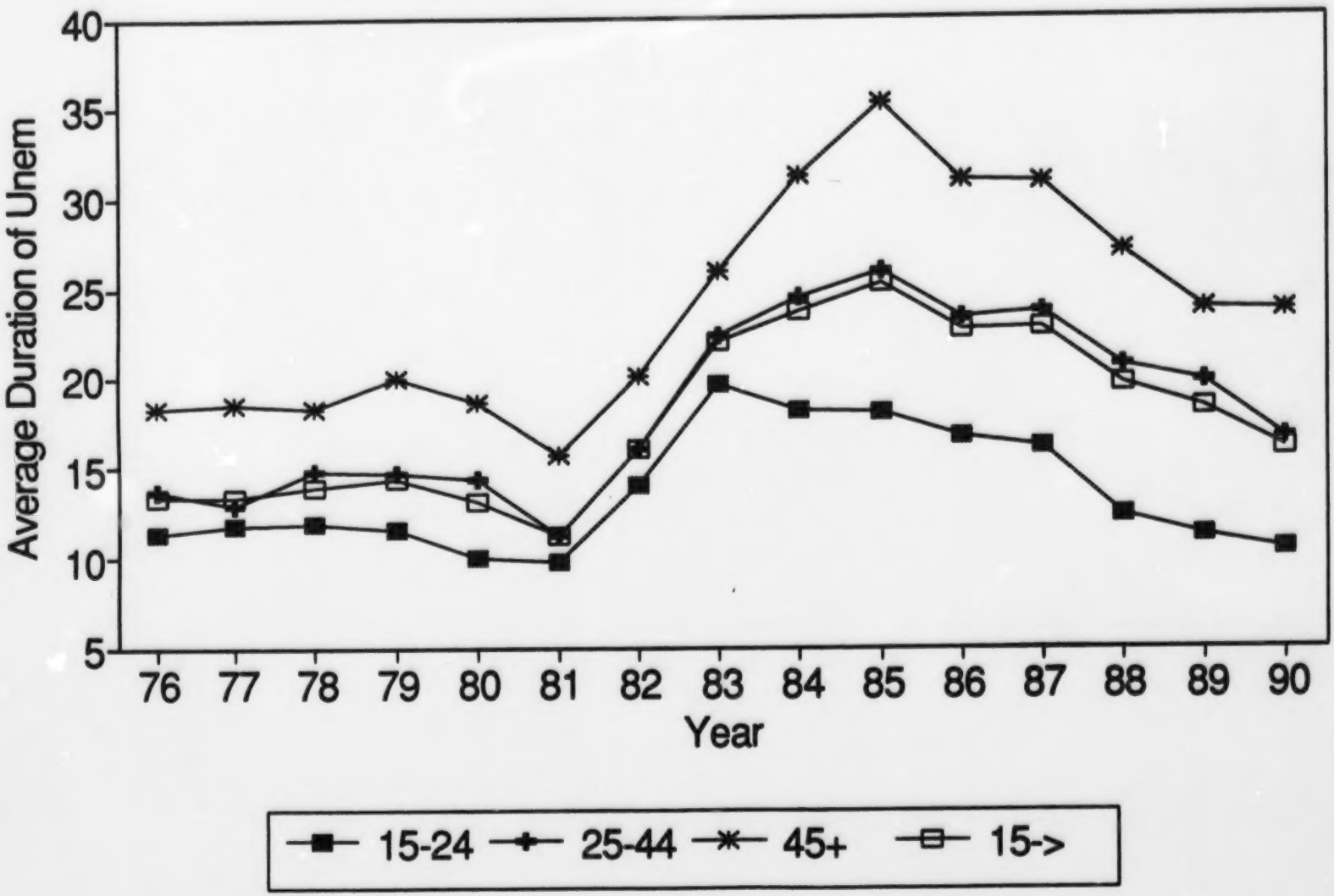


Fig.29 Unemployment Incidence

B.C. Males 1976-90

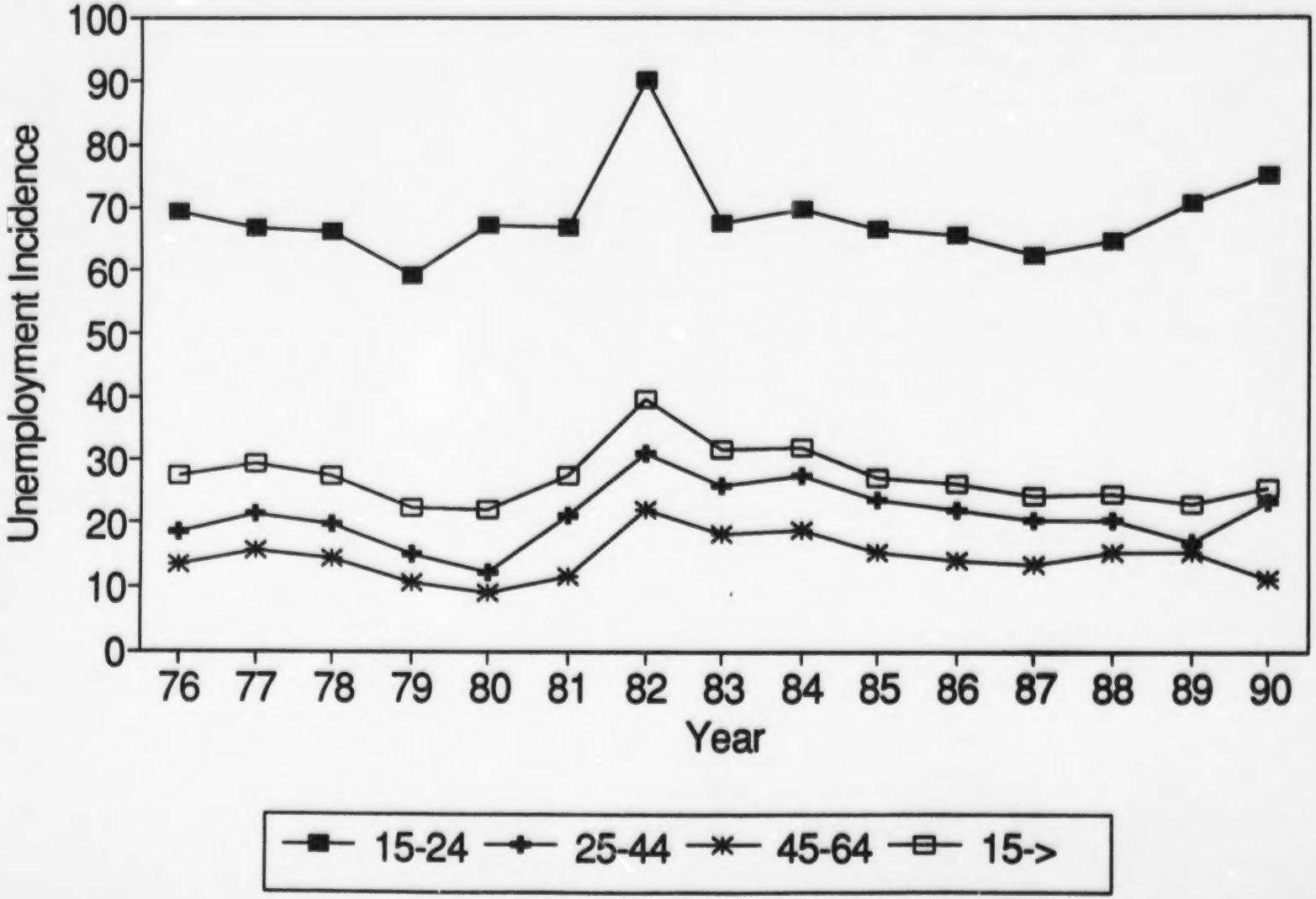


Fig.30 Unemployment Incidence

B.C. Females 1976-90

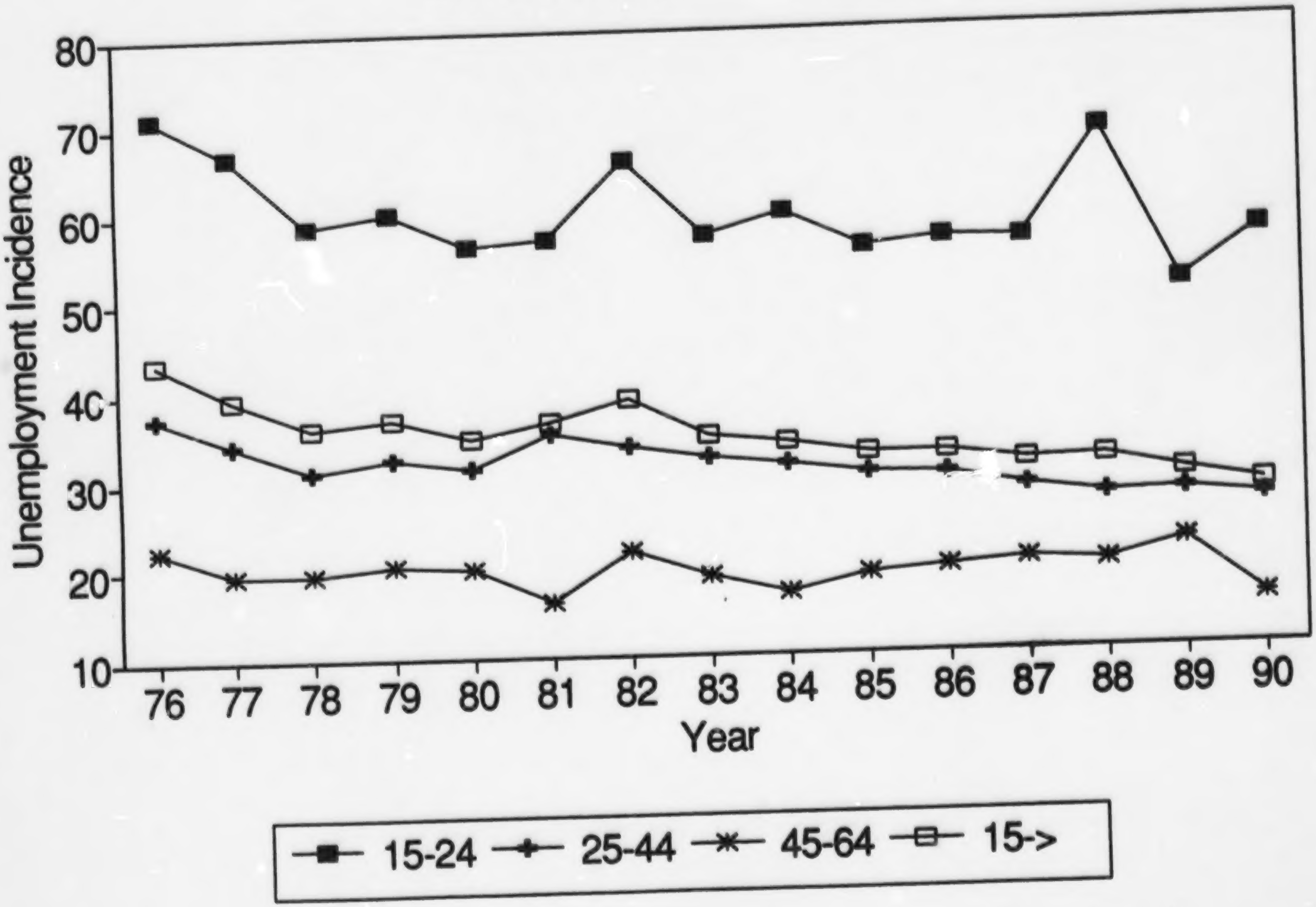


Fig.31 Unemployment Incidence

B.C. Males and Females 1976-90

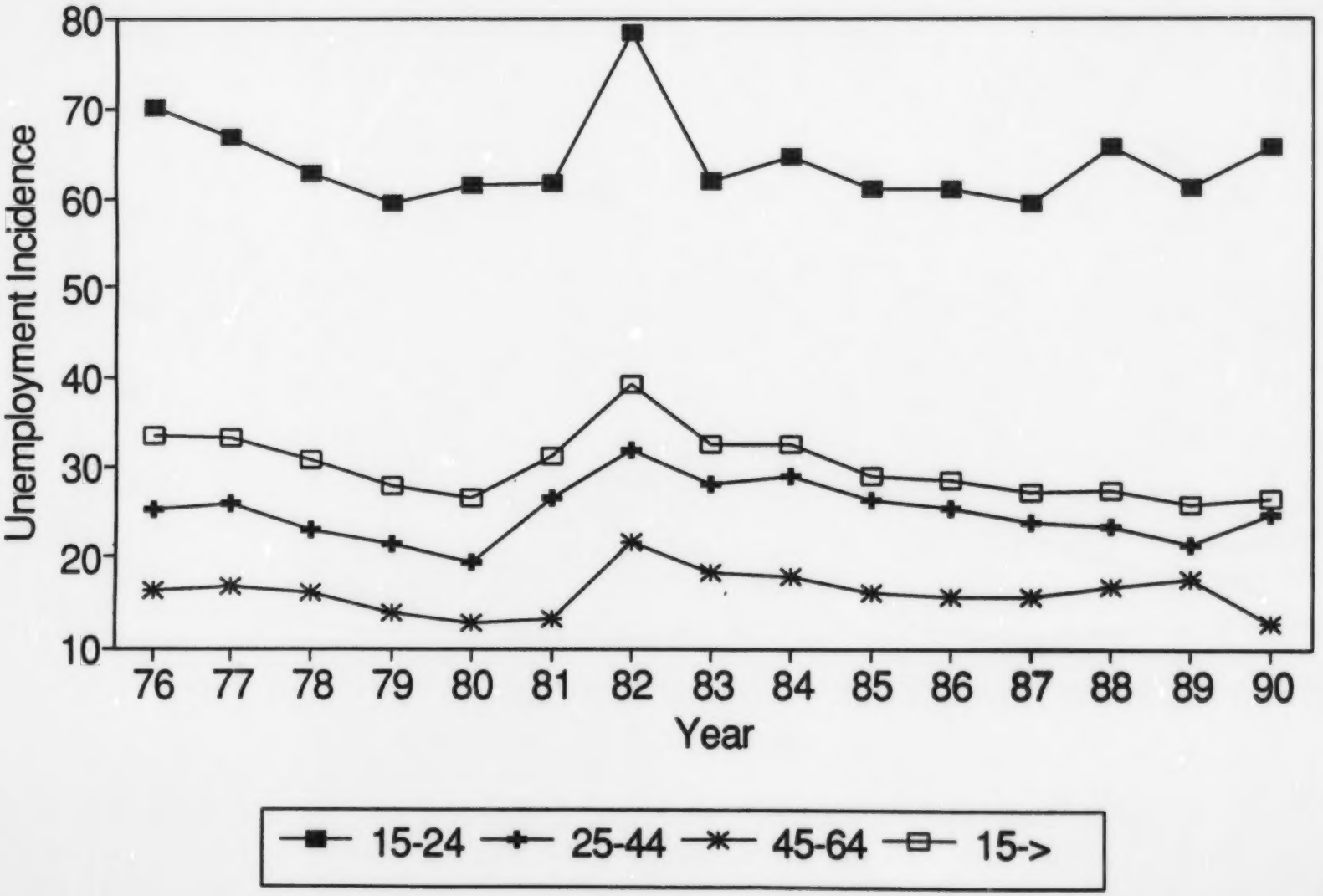


Fig.32 Unem.Incidence Index

B.C. Males and Females 1976-90

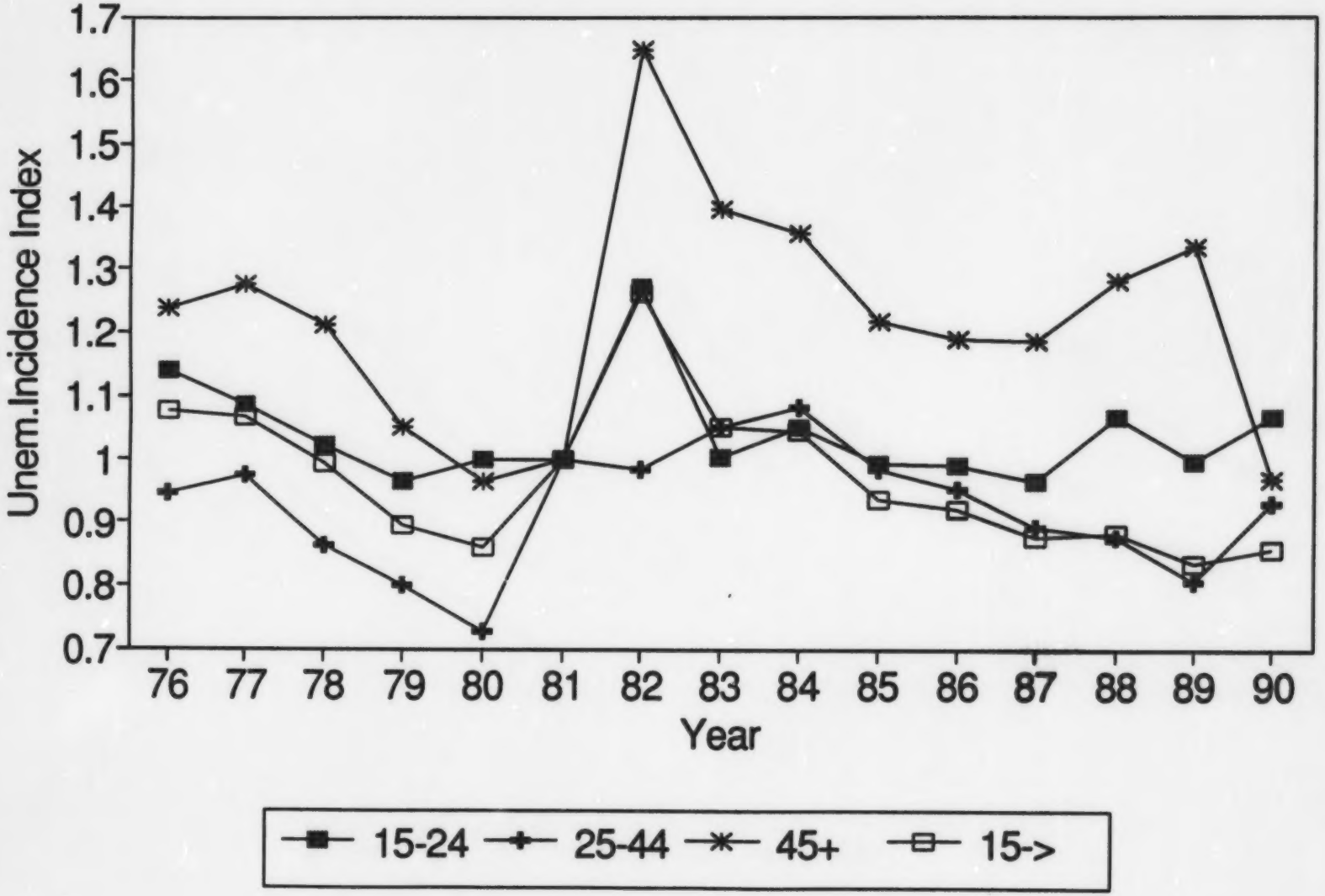


Fig.33 Duration of Unem Index

B.C. Males and Females 1976-90

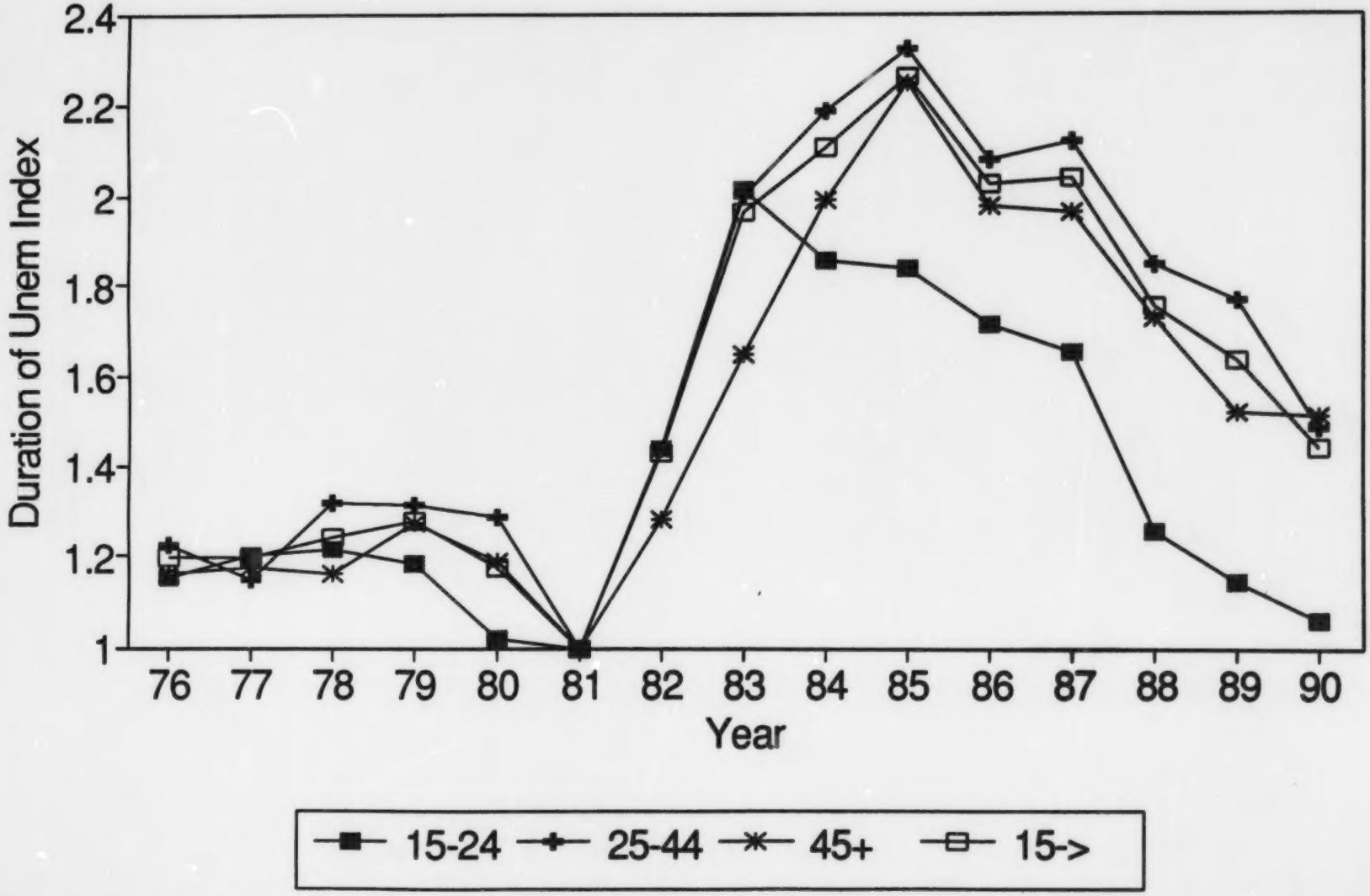


Figure 34

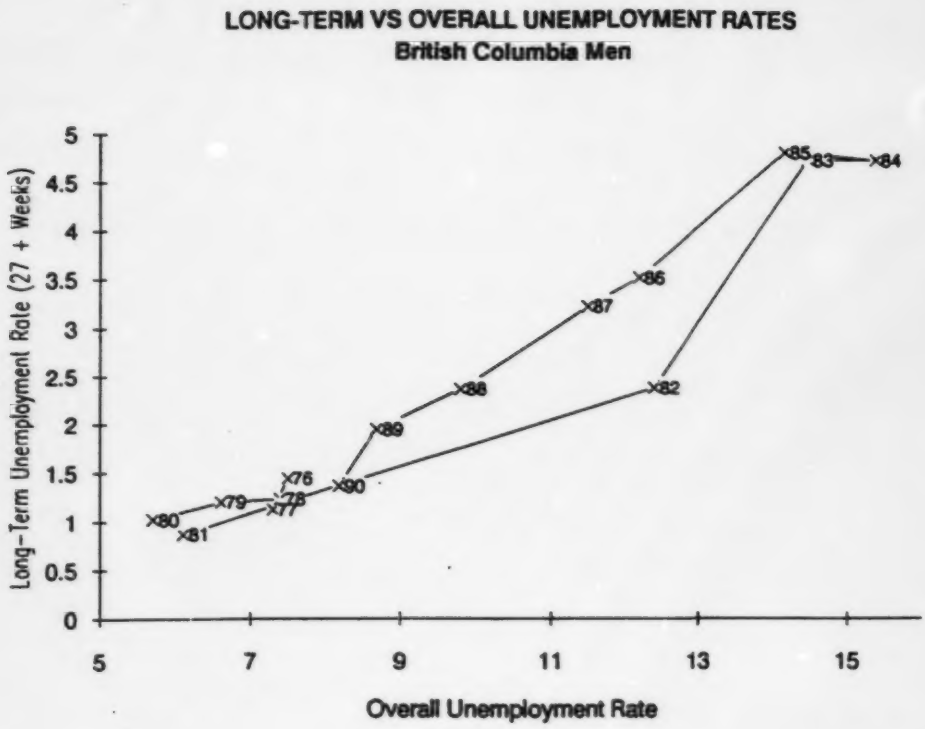

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Men
Long-Term Unemployment Rate (27 + Weeks)
Overall Unemployment Rate
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5
7
9
11
13
15
80
81
79
77
78
76
90
89
88
87
86
82
85
83
84

Figure 35

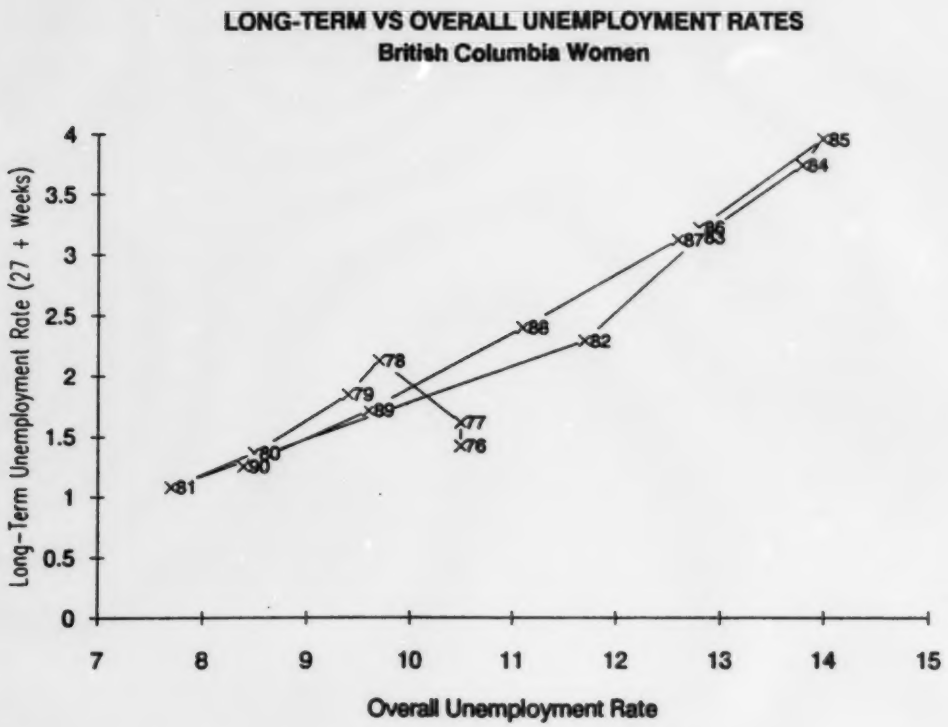

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Women
Long-Term Unemployment Rate (27 + Weeks)
Overall Unemployment Rate
0
0.5
1
1.5
2
2.5
3
3.5
4
7
8
9
10
11
12
13
14
15
81
90
80
79
78
89
77
76
88
82
87
83
86
84
85

Figure 36

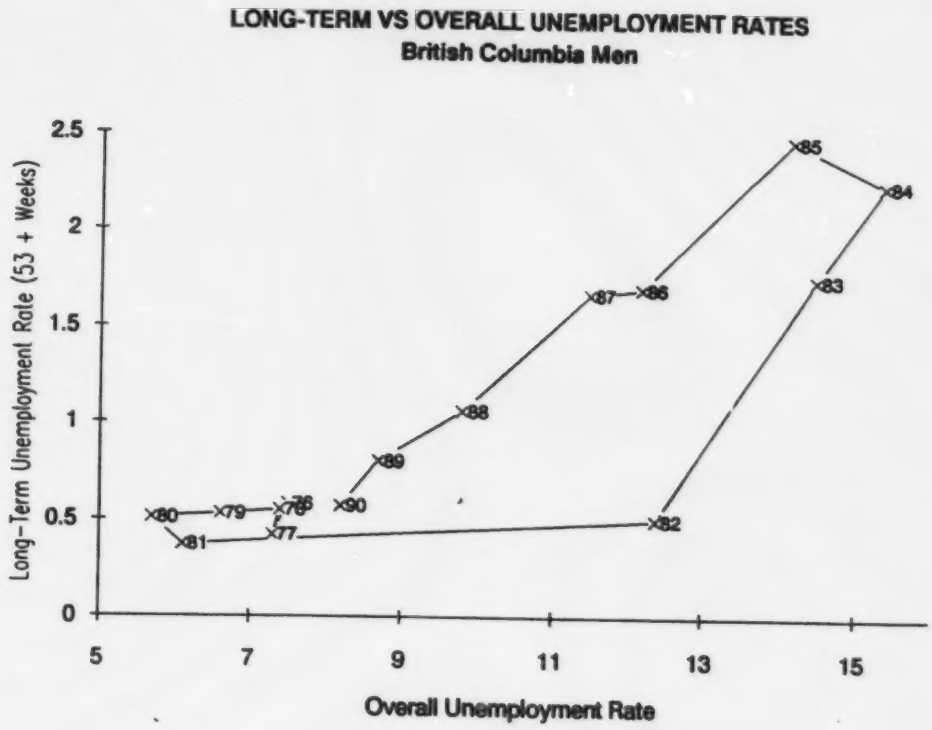

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Men
Long-Term Unemployment Rate (53 + Weeks)
2.5
2
1.5
1
0.5
0
5
7
9
11
13
15
Overall Unemployment Rate
80
81
79
78
77
76
90
89
88
87
86
85
84
83
82

Figure 37

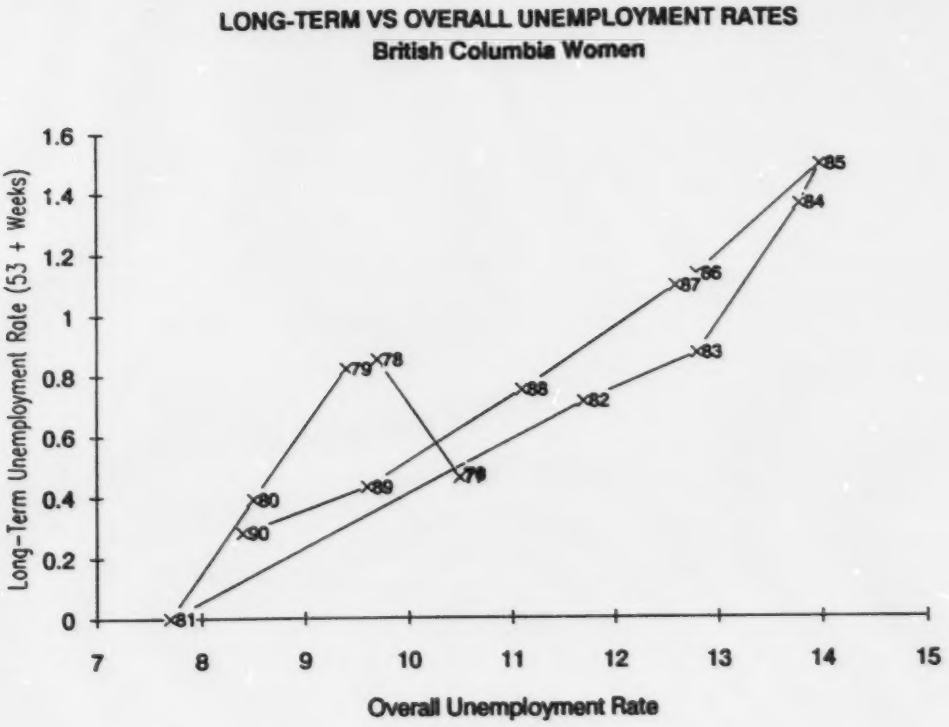

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Women
Long-Term Unemployment Rate (53 + Weeks)
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
7
8
9
10
11
12
13
14
15
Overall Unemployment Rate
85
84
86
87
83
88
82
79
78
80
89
90
81

Figure 38

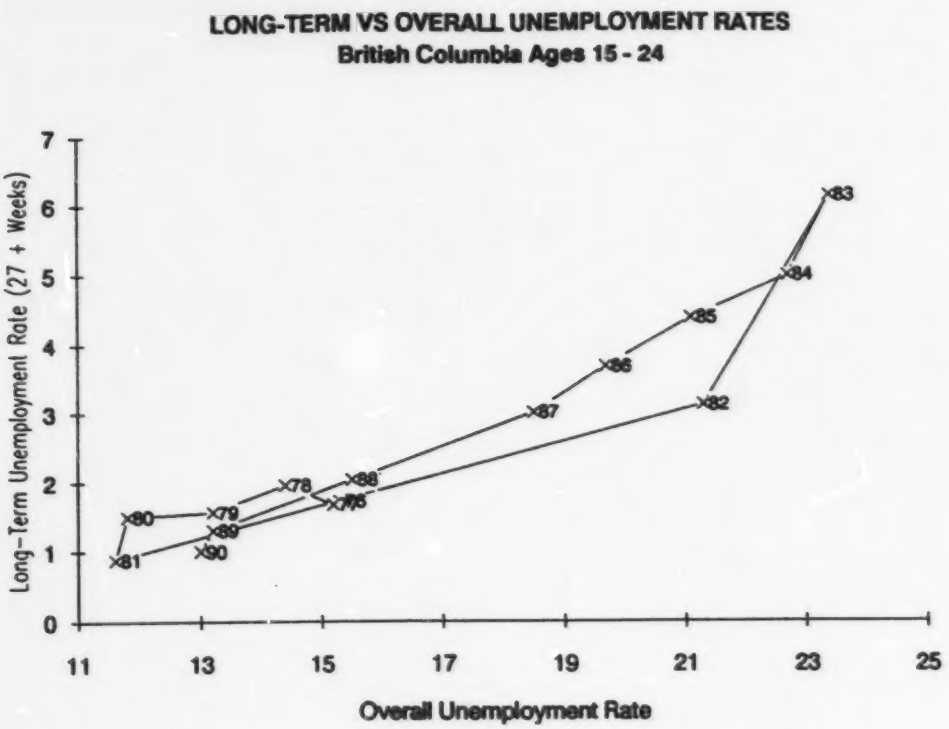

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Ages 15 - 24
Long-Term Unemployment Rate (27 + Weeks)
Overall Unemployment Rate
0
1
2
3
4
5
6
7
11
13
15
17
19
21
23
25
80
81
79
90
89
78
88
76
87
86
85
84
83
82

Figure 39

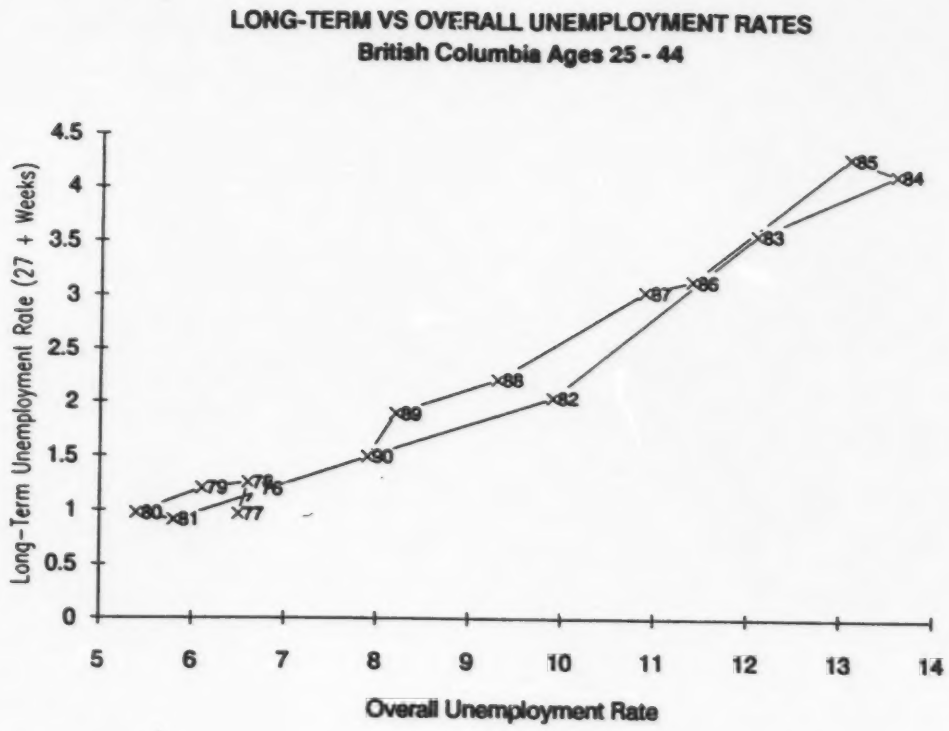

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Ages 25 - 44
Long-Term Unemployment Rate (27 + Weeks)
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
5
6
7
8
9
10
11
12
13
14
Overall Unemployment Rate
80
81
79
78
76
77
90
89
88
82
87
86
83
85
84

Figure 40

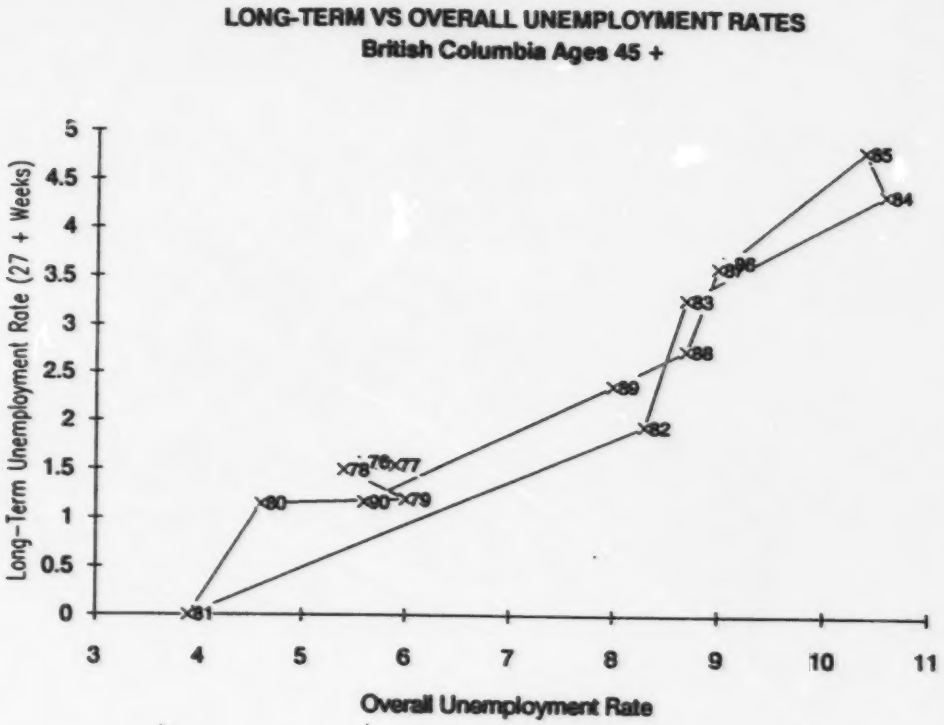

LONG-TERM VS OVERALL UNEMPLOYMENT RATES
British Columbia Ages 45 +
Long-Term Unemployment Rate (27 + Weeks)
Overall Unemployment Rate
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
3
4
5
6
7
8
9
10
11
81
80
78
76
77
90
79
89
82
83
88
86
85
84

Fig.41 Unemployment Rates

By Educ. Attainment 1975-90

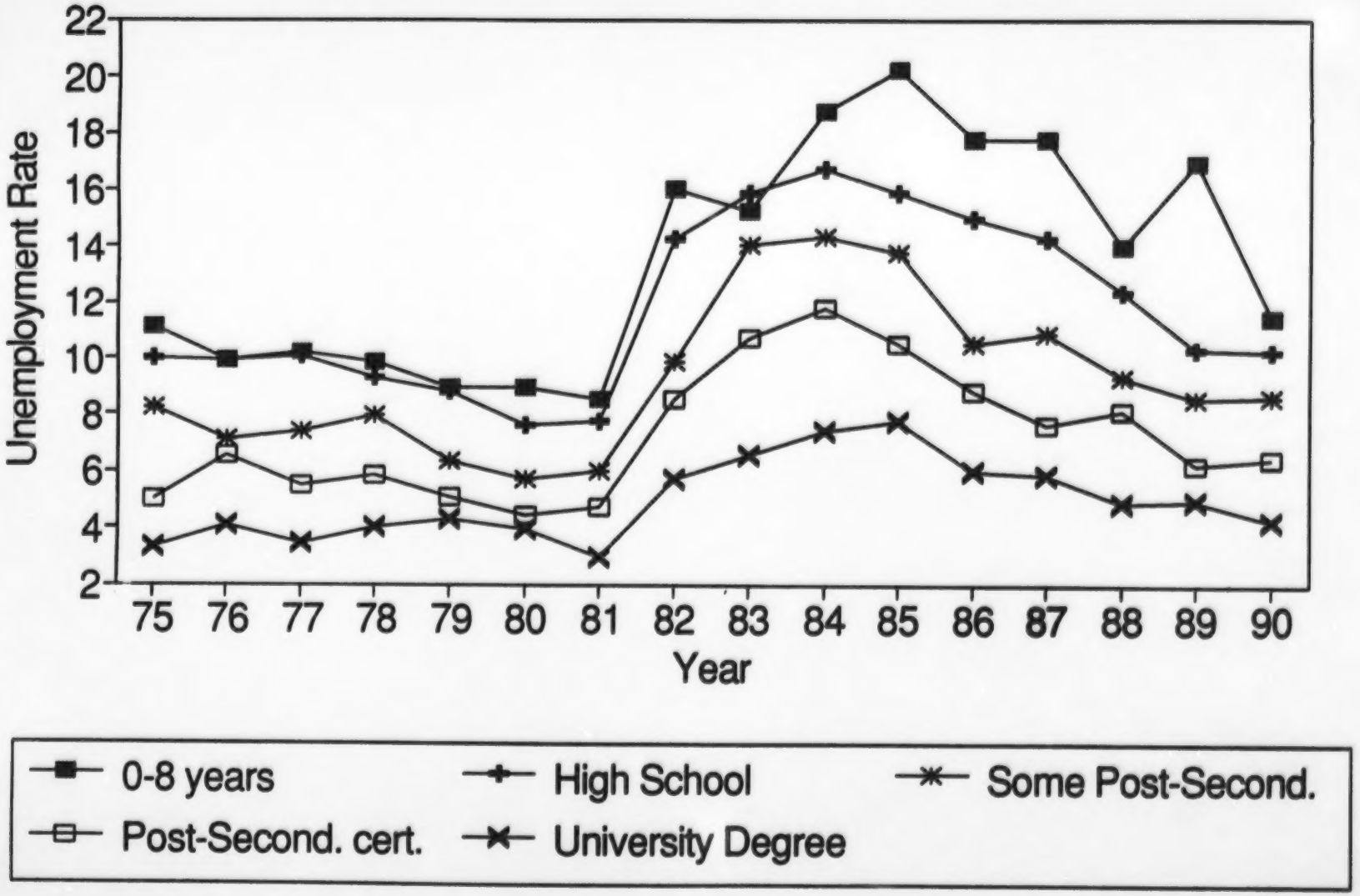


Fig.42 Participation Rate
By Educ.Attainment 1975-90

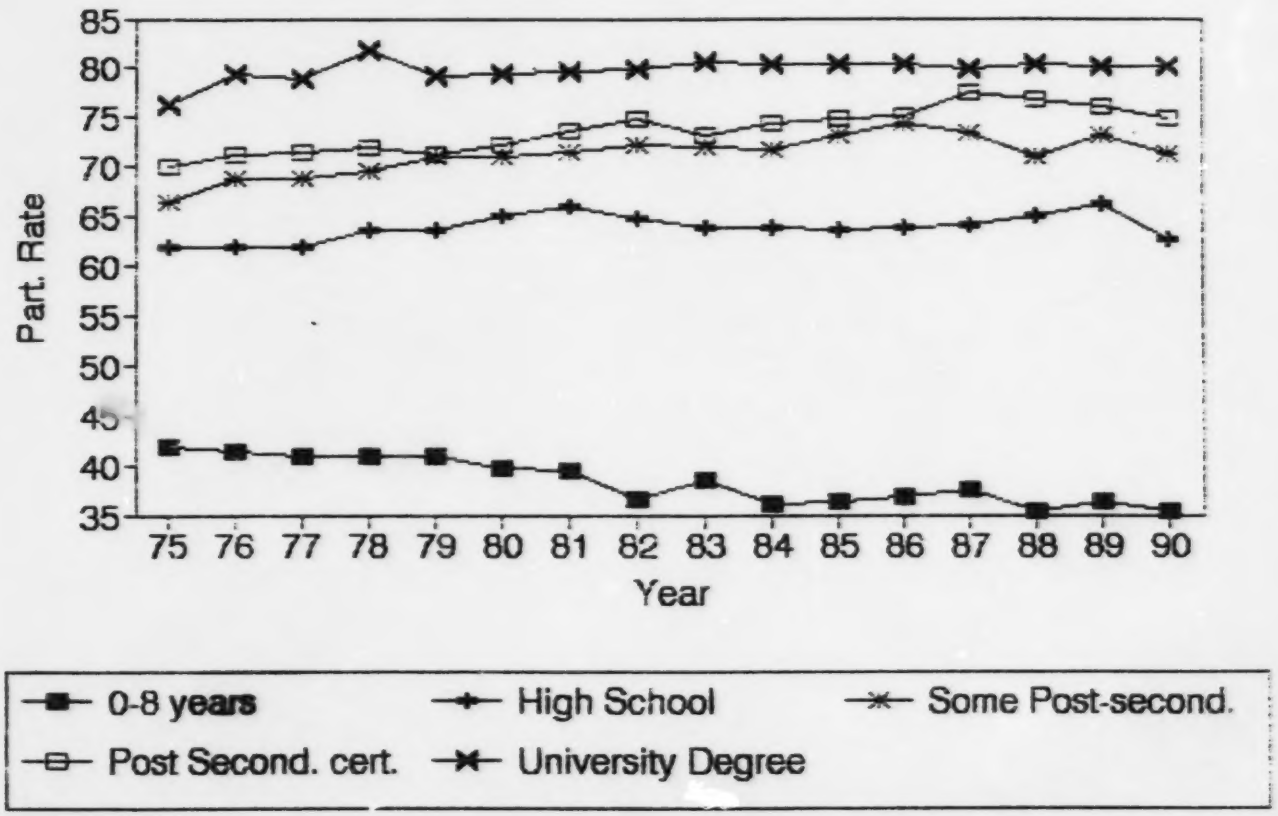


Fig.43 Employment/Pop. Ratio

By Educ. Attainment 1975-90

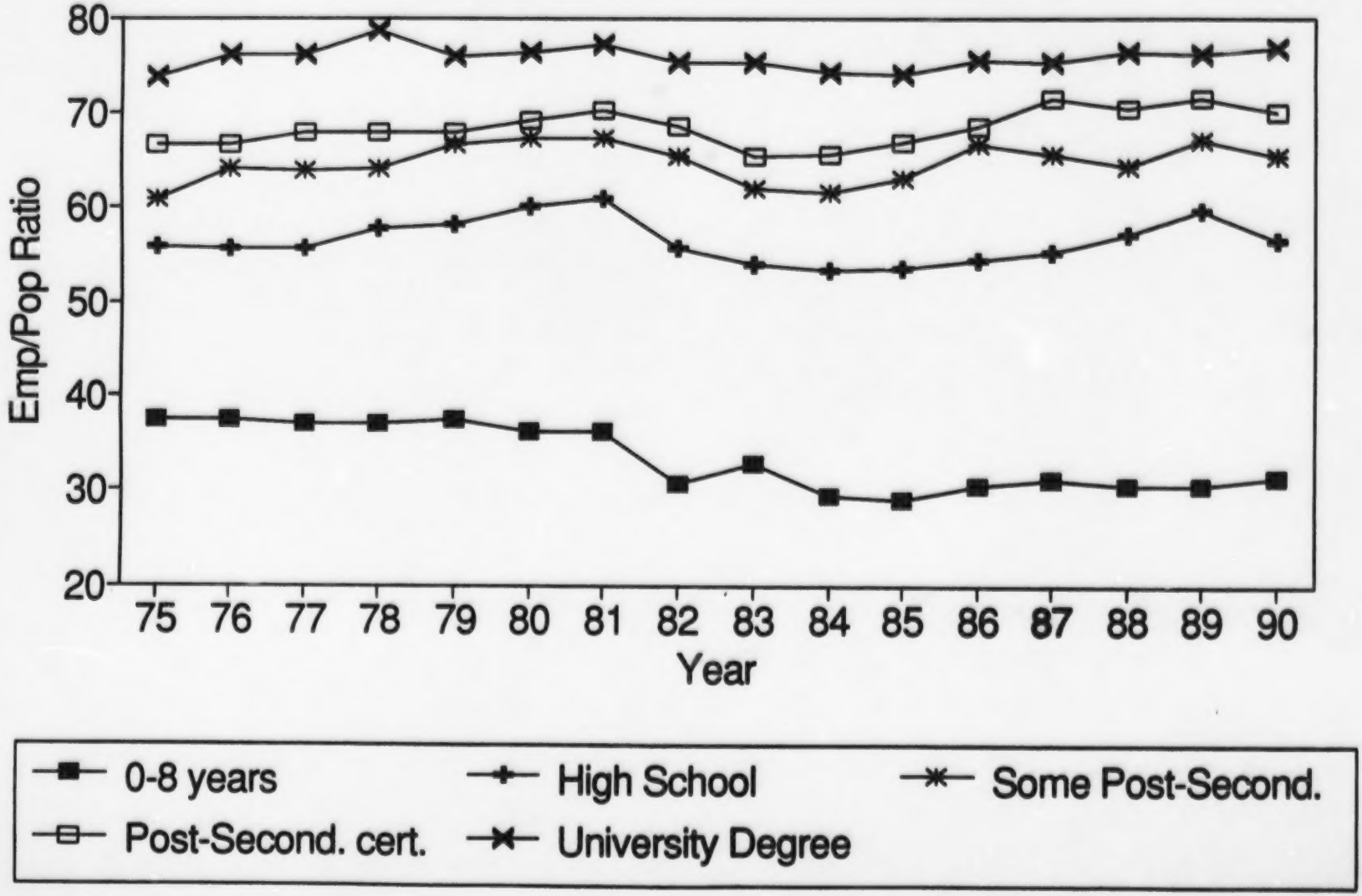


Fig.44 Unem Rates Index

By Educ. Attainment 1975-90

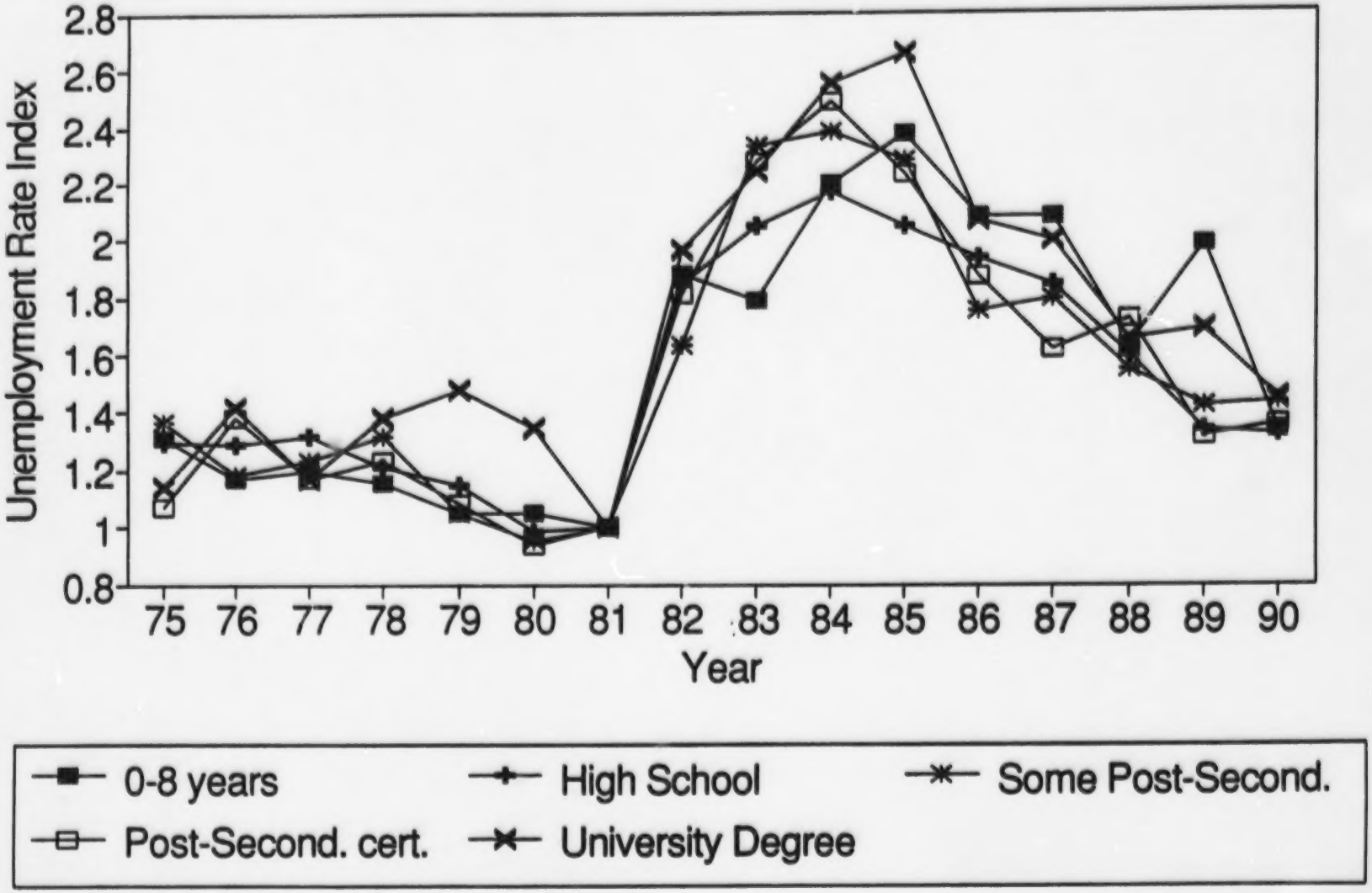


Fig.45 Part. Rate Index

By Educ.Attainment 1975-90

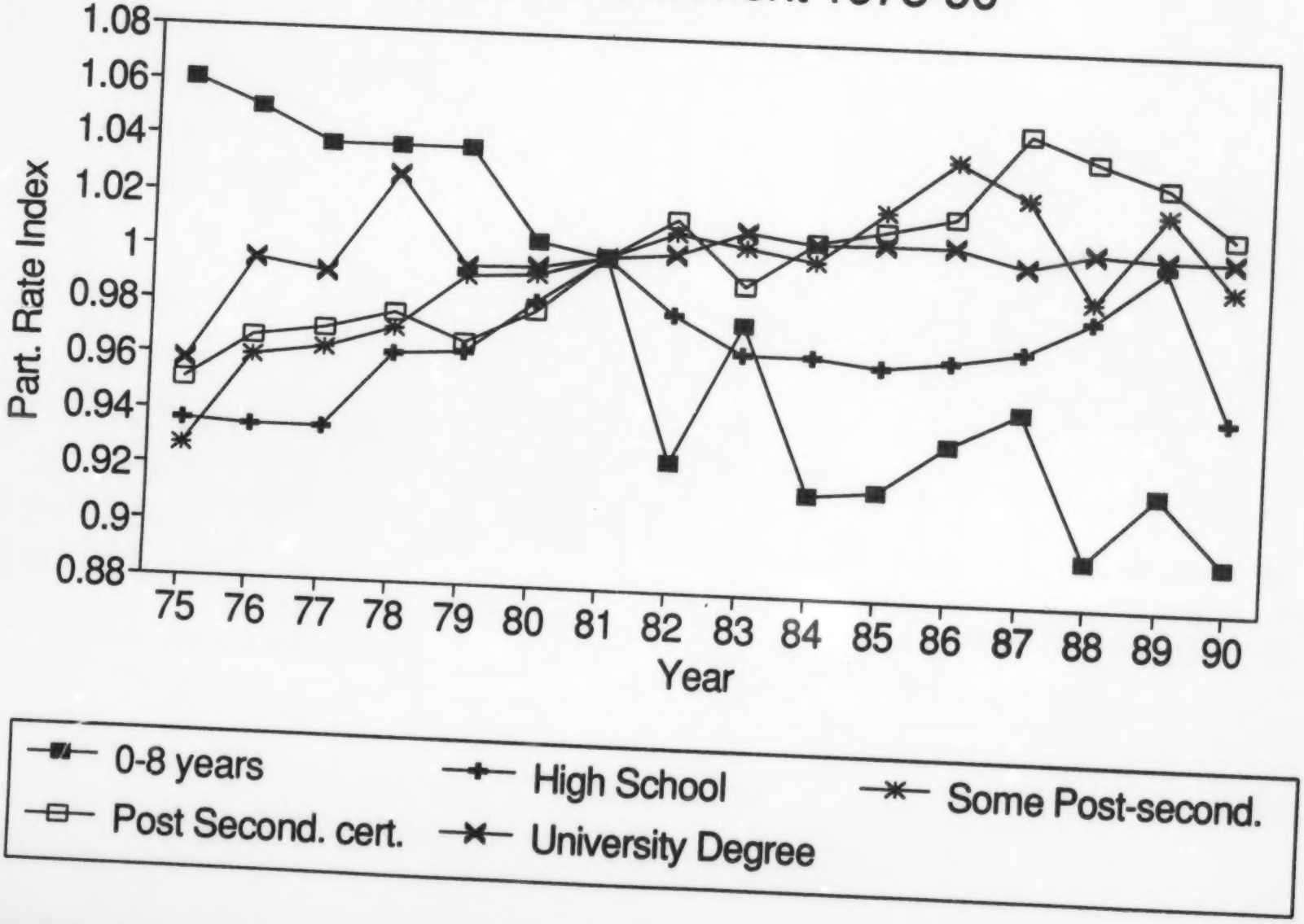
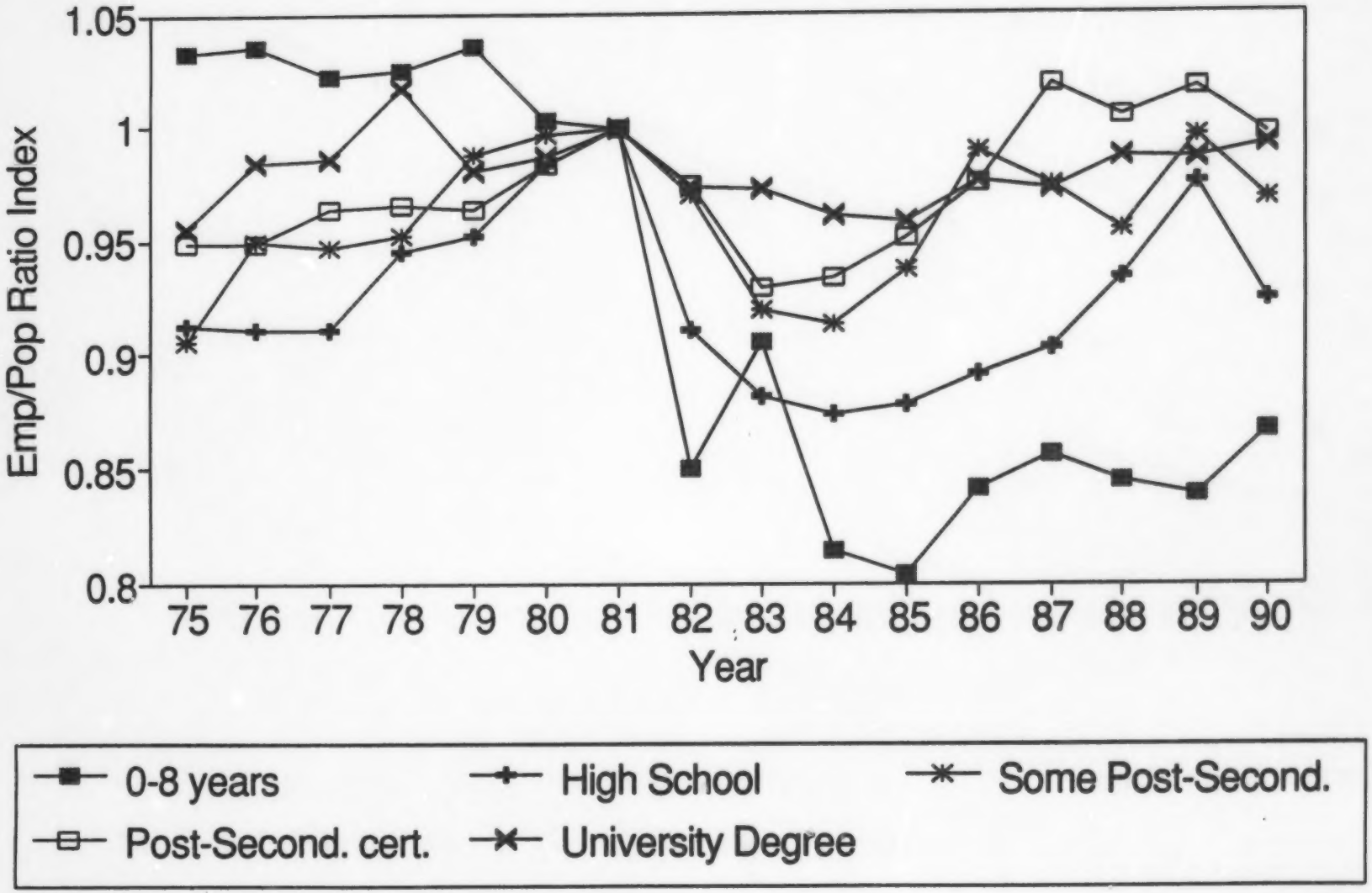


Fig.46 Emp./Pop. Ratio Index

By Educ. Attainment 1975-90



Appendix

This appendix provides further evidence on the incidence and duration of unemployment be age and sex. Whereas the evidence in the main body of the paper was based on the published incomplete spell duration statistics, this appendix reports measures of incidence and duration using unpublished gross flows data. As explained in Part I of the paper (see in particular pp. 19-20 and footnote 10), these data allow one to estimate the completed spell duration which is the appropriate measure for the decomposition of the unemployment rate into its incidence and duration components. However the gross flows data are known to contain substantial measurement or classification errors; therefore it is not clear that the estimates in this appendix are superior to those in the text of the paper.

The evidence is organized as follows. Tables A1, A2 and A3 give the estimated unemployment duration and incidence for males, females and both sexes respectively. Each table contains information for all ages, youths (15-24 years) and adults (25 years and over). Average duration is reported in months and incidence in percent. Both series are also reported in index form using 1977 as the base year. The data are available for the period 1977-89. After each table are three plots, each showing incidence and duration in index form for the period 1977-89.

Examination of this information shows that the general nature of the evidence is similar to that observed with the published incomplete duration statistics, although the estimated durations are themselves quite far apart. In particular, incidence for males had by 1989 returned to its 1977 level whereas average duration was about 30 percent above that level (Figure A1). The increased duration is attributable to adult males; youths did not experience an

increase in either incidence or duration (Figures A2 and A3).

Duration of unemployment also rose for females, remaining in 1989 about 25 percent above the 1977 level (Figure A4). However, the incidence of female unemployment declined to 75 percent of the 1977 level, so that little change in the female unemployment rate was observed. Again, these developments can largely be attributed to adult women (Figures A5 and A6).

Table A1

Unemployment Rate, Average Duration and Incidence (B.C., Males)

	UR			Average Duration			Incidence			Duration Index			Incidence Index		
year	x	y	z	x	y	z	x	y	z	x	y	z	x	y	z
77	7.3	14.9	5.1	2.276	2.326	2.613	38.49	76.87	23.42	1.00	1.00	1.00	1.00	1.00	1.00
78	7.4	15	5.1	2.293	2.421	2.689	38.73	74.35	22.76	1.01	1.04	1.03	1.01	0.97	0.97
79	6.6	13.6	4.5	2.36	2.415	2.811	33.56	67.58	19.21	1.04	1.04	1.08	0.87	0.88	0.82
80	5.7	12.4	3.7	2.129	2.221	2.346	32.13	67.00	18.93	0.94	0.95	0.90	0.83	0.87	0.81
81	6	12.2	4.3	2.131	2.231	2.378	33.79	65.62	21.70	0.94	0.96	0.91	0.88	0.85	0.93
82	12.4	24.4	9.1	2.813	2.763	2.906	52.90	105.97	37.38	1.24	1.19	1.11	1.37	1.38	1.60
83	14.5	27.7	11.1	3.371	3.206	3.514	51.62	103.68	37.91	1.48	1.38	1.34	1.34	1.35	1.62
84	15.4	25.5	13	3.418	3.05	3.834	54.07	100.33	40.69	1.50	1.31	1.47	1.40	1.31	1.74
85	14.2	23.7	12.1	3.279	2.857	3.699	51.97	99.54	39.25	1.44	1.23	1.42	1.35	1.29	1.68
86	12.2	22	10	3.325	2.717	3.99	44.03	97.17	30.08	1.46	1.17	1.53	1.14	1.26	1.28
87	11.5	19.9	9.5	3.16	2.754	3.676	43.67	86.71	31.01	1.39	1.18	1.41	1.13	1.13	1.32
88	9.8	16.4	8.3	3.09	2.815	3.546	38.06	69.91	28.09	1.36	1.21	1.36	0.99	0.91	1.20
89	8.7	15	7.3	2.835	2.175	3.243	36.83	82.76	27.01	1.25	0.94	1.24	0.96	1.08	1.15

* UR indicates unemployment rate.
* x indicates all ages.
* y indicates ages 15-24.
* z indicates ages 25 and over.

Figure A1

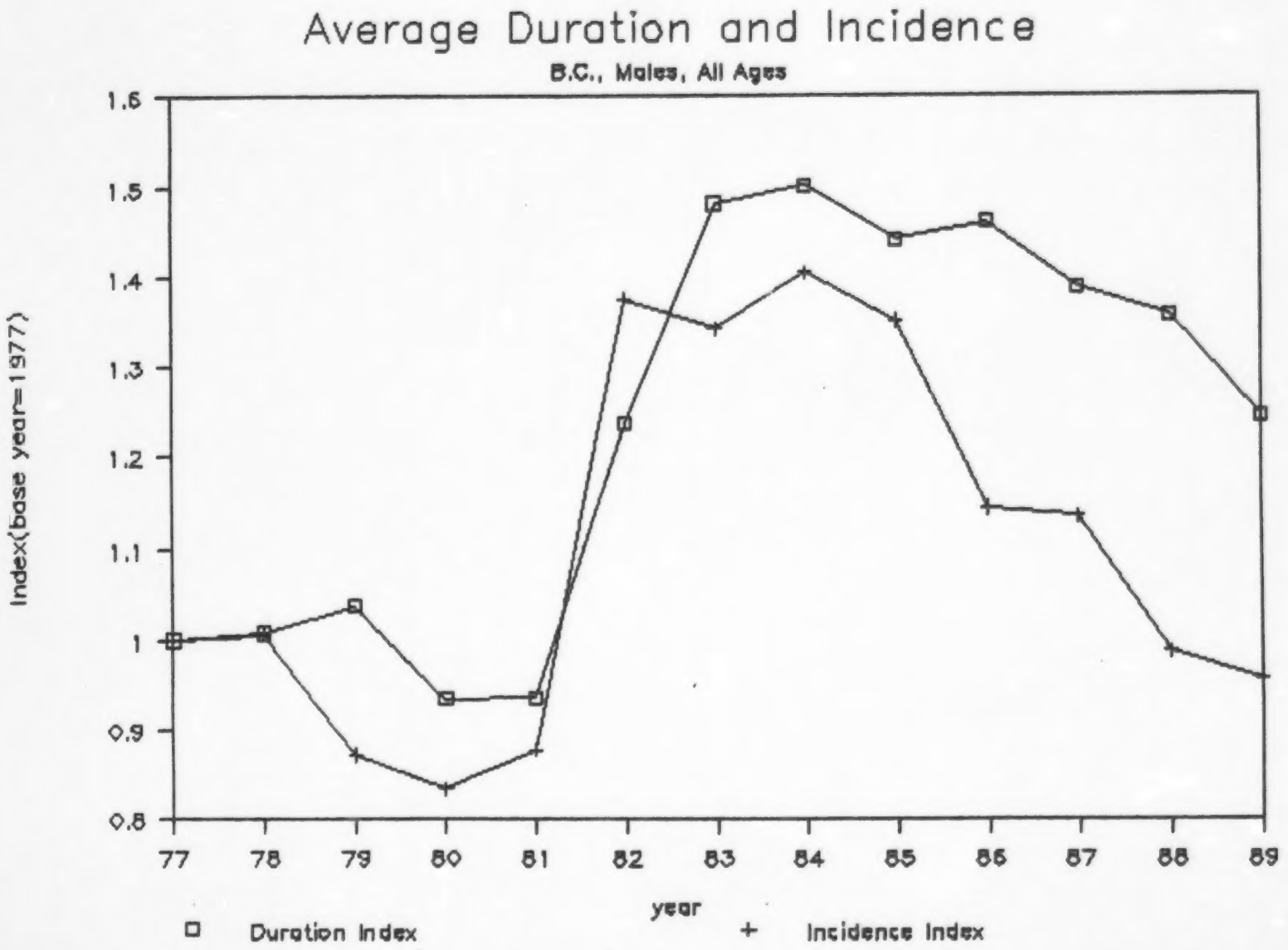

Average Duration and Incidence
B.C., Males, All Ages
Index(base year=1977)
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A2

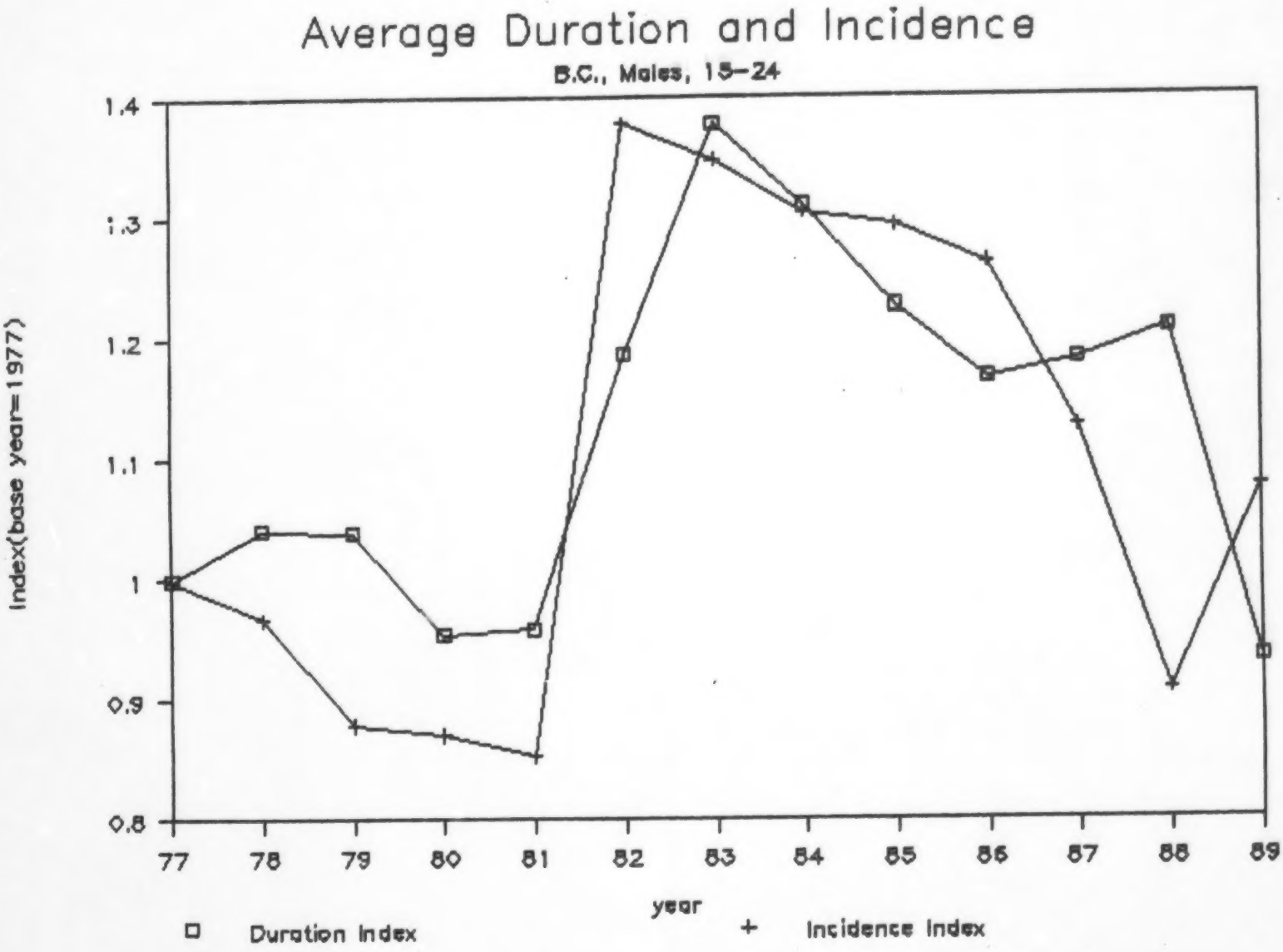

Average Duration and Incidence
B.C., Males, 15–24
Index(base year=1977)
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A3

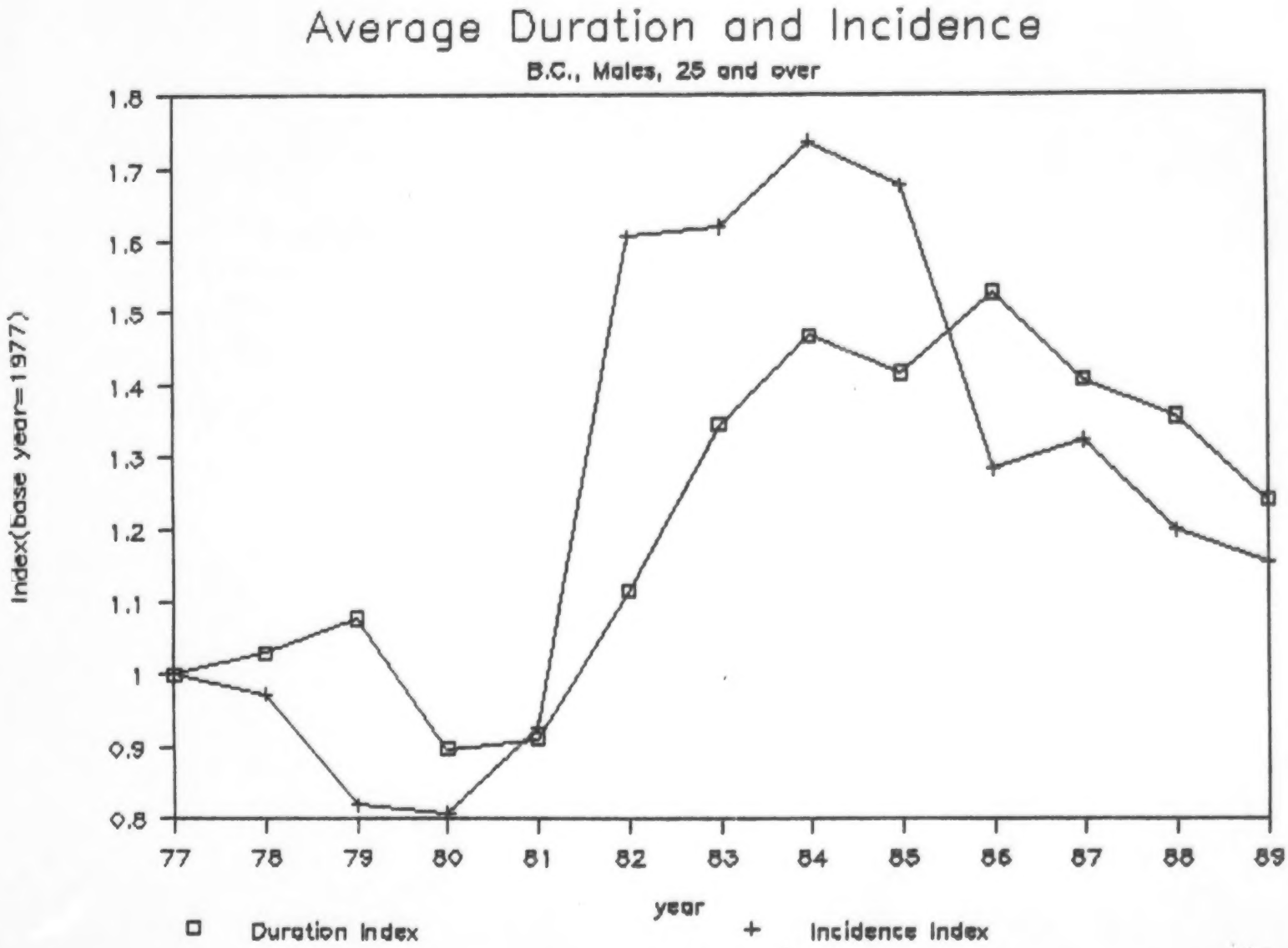

Average Duration and Incidence
B.C., Males, 25 and over
Index(base year=1977)
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Table A2

Unemployment Rate, Average Duration and Incidence (B.C., Females)

	UR			Average Duration			Incidence			Duration Index			Incidence Index		
year	x	y	z	x	y	z	x	y	z	x	y	z	x	y	z
77	10.5	15.5	8.2	2.167	2.443	2.185	58.14	76.14	45.03	1.00	1.00	1.00	1.00	1.00	1.00
78	9.7	13.6	8	2.227	2.36	2.341	52.27	69.15	41.01	1.03	0.97	1.07	0.90	0.91	0.91
79	9.4	12.9	7.8	2.055	1.958	2.189	54.89	79.06	42.76	0.95	0.80	1.00	0.94	1.04	0.95
80	8.5	11.2	7.3	2.015	1.949	2.174	50.62	68.96	40.29	0.93	0.80	0.99	0.87	0.91	0.89
81	7.7	10.9	6.4	2.045	2.372	2.042	45.18	55.14	37.61	0.94	0.97	0.93	0.78	0.72	0.84
82	11.7	17.6	9.5	2.538	2.706	2.527	55.32	78.05	45.11	1.17	1.11	1.16	0.95	1.03	1.00
83	12.8	18.7	10.8	2.766	2.659	2.906	55.53	84.39	44.60	1.28	1.09	1.33	0.96	1.11	0.99
84	13.8	19.5	11.9	2.93	2.663	3.13	56.52	87.87	45.62	1.35	1.09	1.43	0.97	1.15	1.01
85	14	18.5	12.6	2.92	2.648	3.151	57.53	83.84	47.98	1.35	1.08	1.44	0.99	1.10	1.07
86	12.8	17.3	11.5	2.826	2.418	3.089	54.35	85.86	44.67	1.30	0.99	1.41	0.93	1.13	0.99
87	12.5	16.9	11.3	2.909	2.7	3.115	51.56	75.11	43.53	1.34	1.11	1.43	0.89	0.99	0.97
88	11.1	14.7	10.1	2.777	2.607	3.002	47.97	67.66	39.33	1.28	1.07	1.41	0.82	0.89	0.87
89	9.6	11.2	9.2	2.688	1.912	2.929	42.86	70.29	37.69	1.24	0.78	1.34	0.74	0.92	0.84

* UR indicates unemployment rate.
* x indicates all ages.
* y indicates ages 15-24.
* z indicates ages 25 and over.

Figure A4

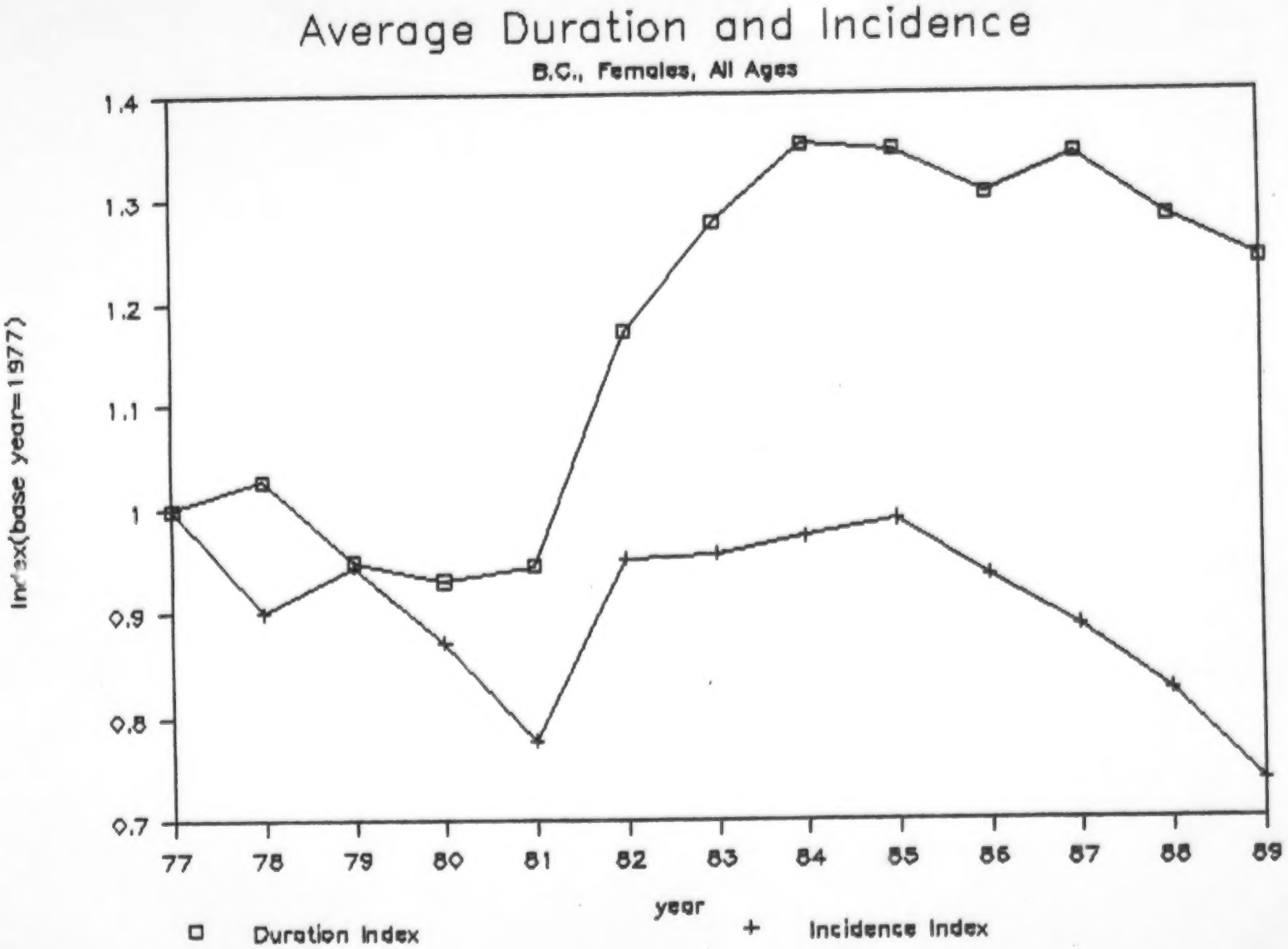

Average Duration and Incidence
B.C., Females, All Ages
Index(base year=1977)
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A5

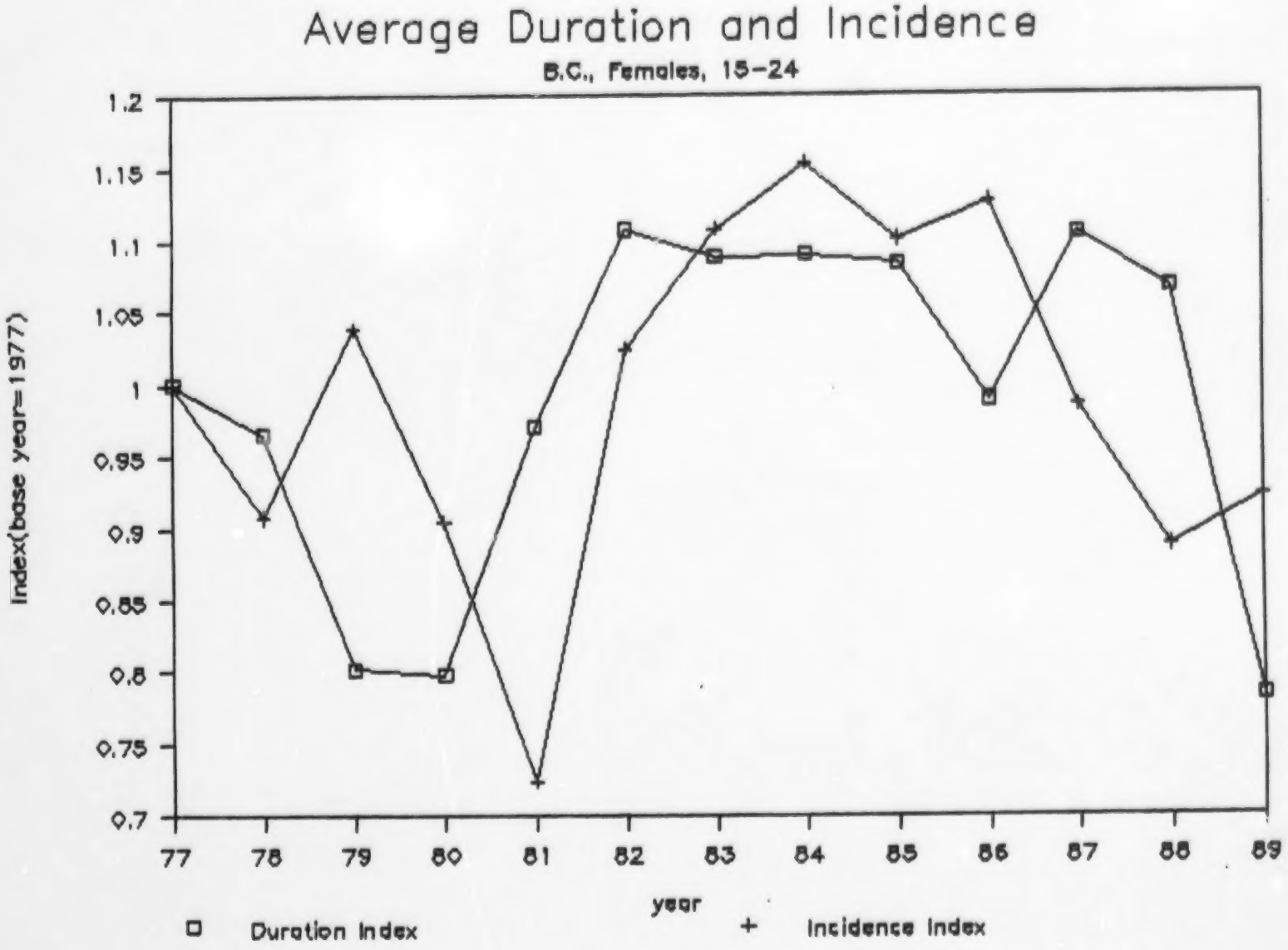

Average Duration and Incidence
B.C., Females, 15-24
Index(base year=1977)
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
0.75
0.7
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A6

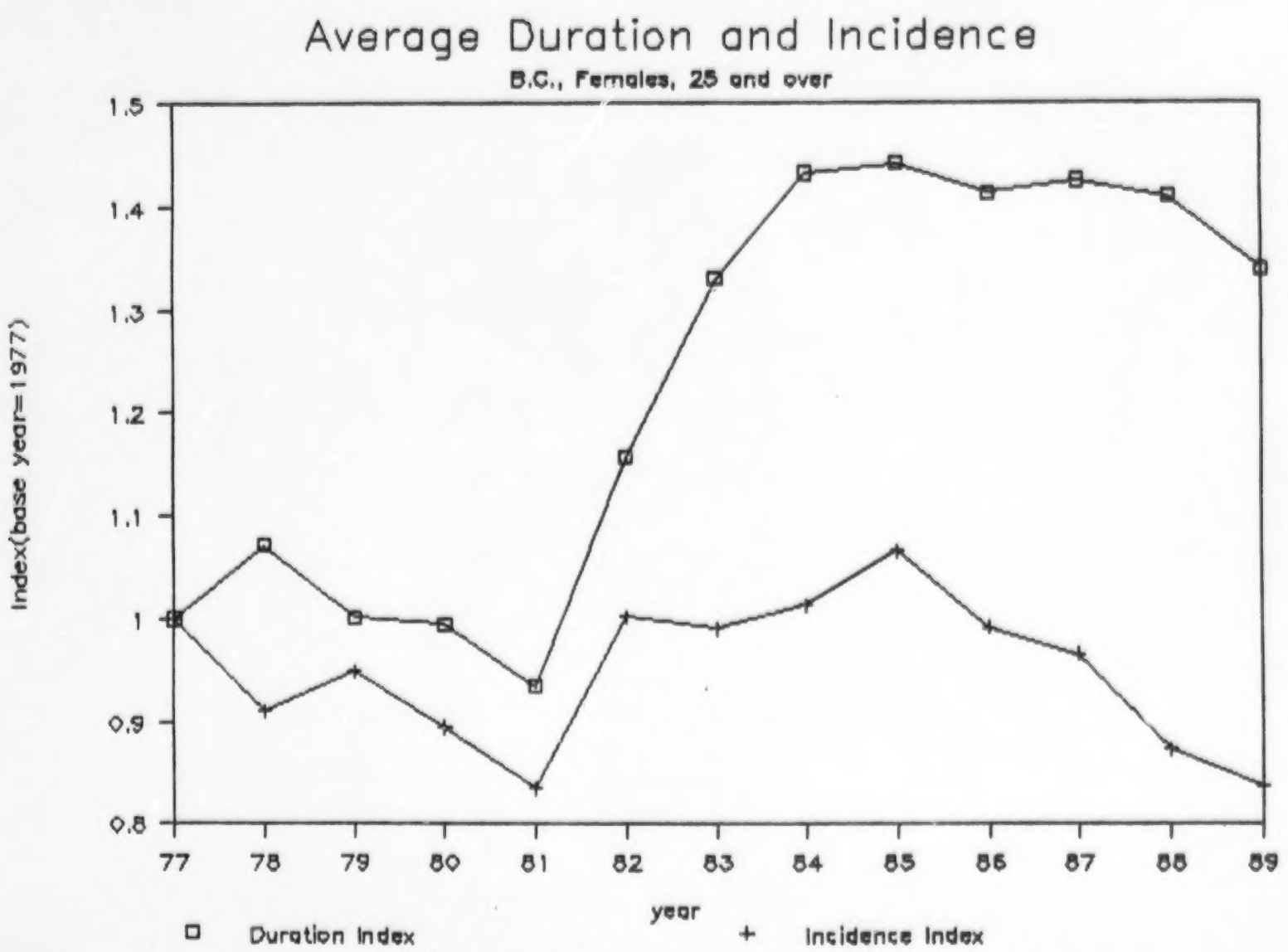

Average Duration and Incidence
B.C., Females, 25 and over
Index(base year=1977)
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Table A3

Unemployment Rate, Average Duration and Incidence (B.C., Both Sexes)

	UR			Average Duration			Incidence			Duration Index			Incidence Index		
year	x	y	z	x	y	z	x	y	z	x	y	z	x	y	z
77	8.5	15.2	6.2	2.233	2.236	2.231	45.68	81.57	33.25	1.00	1.00	1.00	1.00	1.00	1.00
78	8.3	14.4	6.2	2.265	2.155	2.365	43.97	80.19	31.46	1.01	0.96	1.06	0.96	0.98	0.94
79	7.7	13.2	5.7	2.198	2.048	2.325	42.04	77.34	29.29	0.98	0.92	1.05	0.92	0.95	0.88
80	6.8	11.8	5	2.068	1.946	2.189	39.46	72.76	27.41	0.93	0.87	0.98	0.86	0.89	0.82
81	6.7	11.6	5.1	2.072	2.035	2.111	38.80	68.40	28.99	0.93	0.91	0.95	0.85	0.84	0.87
82	12.1	21.3	9.3	2.702	2.68	2.733	53.74	95.37	40.83	1.21	1.20	1.23	1.18	1.17	1.22
83	13.8	23.4	11	3.105	2.881	3.263	53.33	97.47	40.45	1.39	1.29	1.46	1.17	1.19	1.21
84	14.7	22.7	12.6	3.228	2.767	3.539	54.65	98.45	42.72	1.45	1.24	1.59	1.20	1.21	1.28
85	14.1	21.1	12.3	3.11	2.58	3.464	54.41	98.14	42.61	1.39	1.15	1.55	1.19	1.20	1.28
86	12.5	19.7	10.6	3.097	2.512	3.502	48.43	94.11	36.32	1.39	1.12	1.57	1.06	1.15	1.09
87	11.9	18.5	10.3	3.039	2.568	3.344	46.99	86.45	36.96	1.36	1.15	1.50	1.0[illegible]	1.06	1.11
88	10.3	15.5	9.1	2.93	2.349	3.284	42.18	79.18	33.25	1.31	1.05	1.47	0.92	0.97	1.00
89	9.1	13.2	8.1	2.762	2.244	3.069	39.54	70.59	31.67	1.24	1.00	1.38	0.87	0.87	0.95

* UR indicates unemployment rate.
* x indicates all ages.
* y indicates ages 15-24.
* z indicates ages 25 and over.

Figure A7

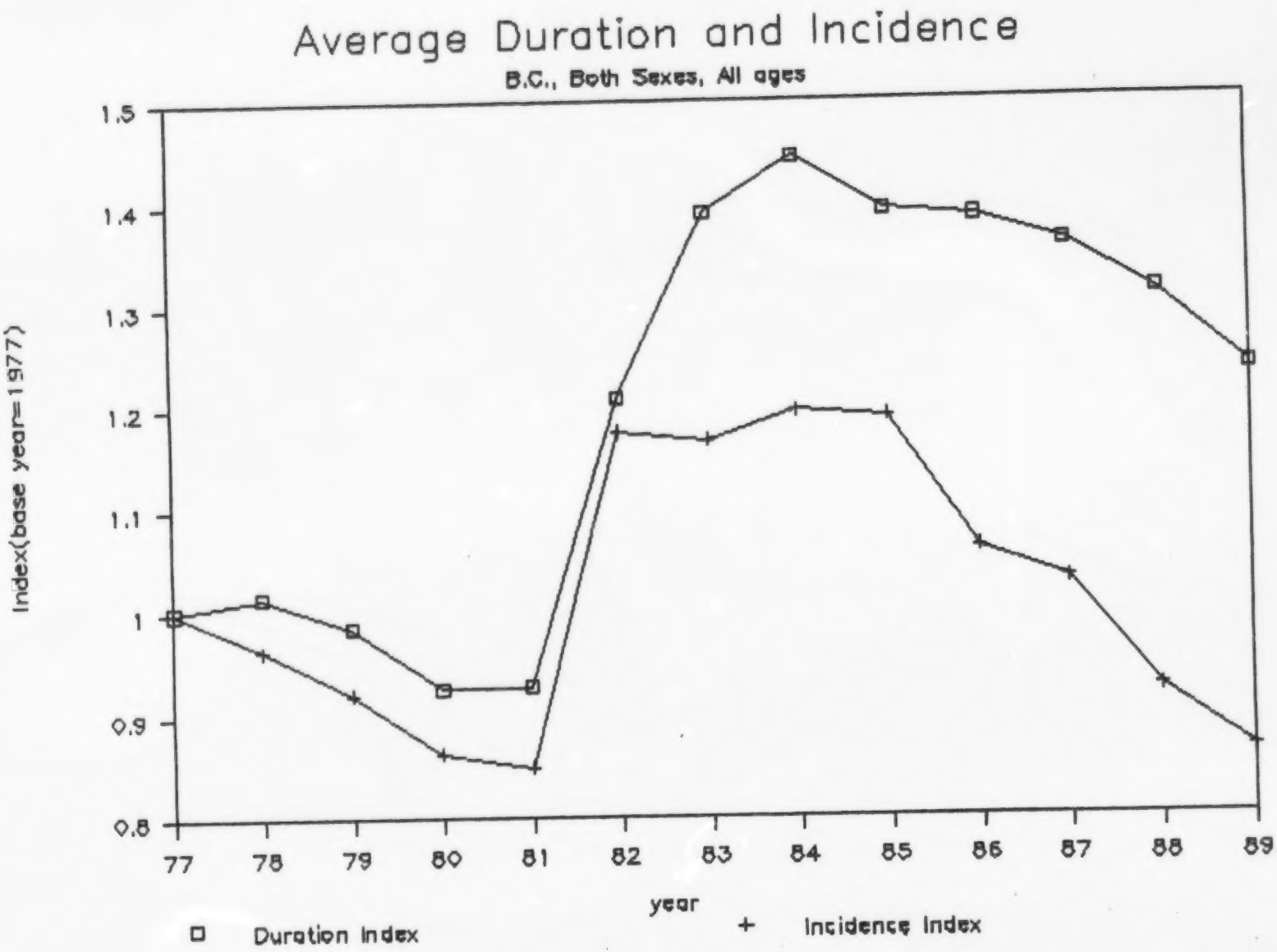

Average Duration and Incidence
B.C., Both Sexes, All ages
Index(base year=1977)
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A8

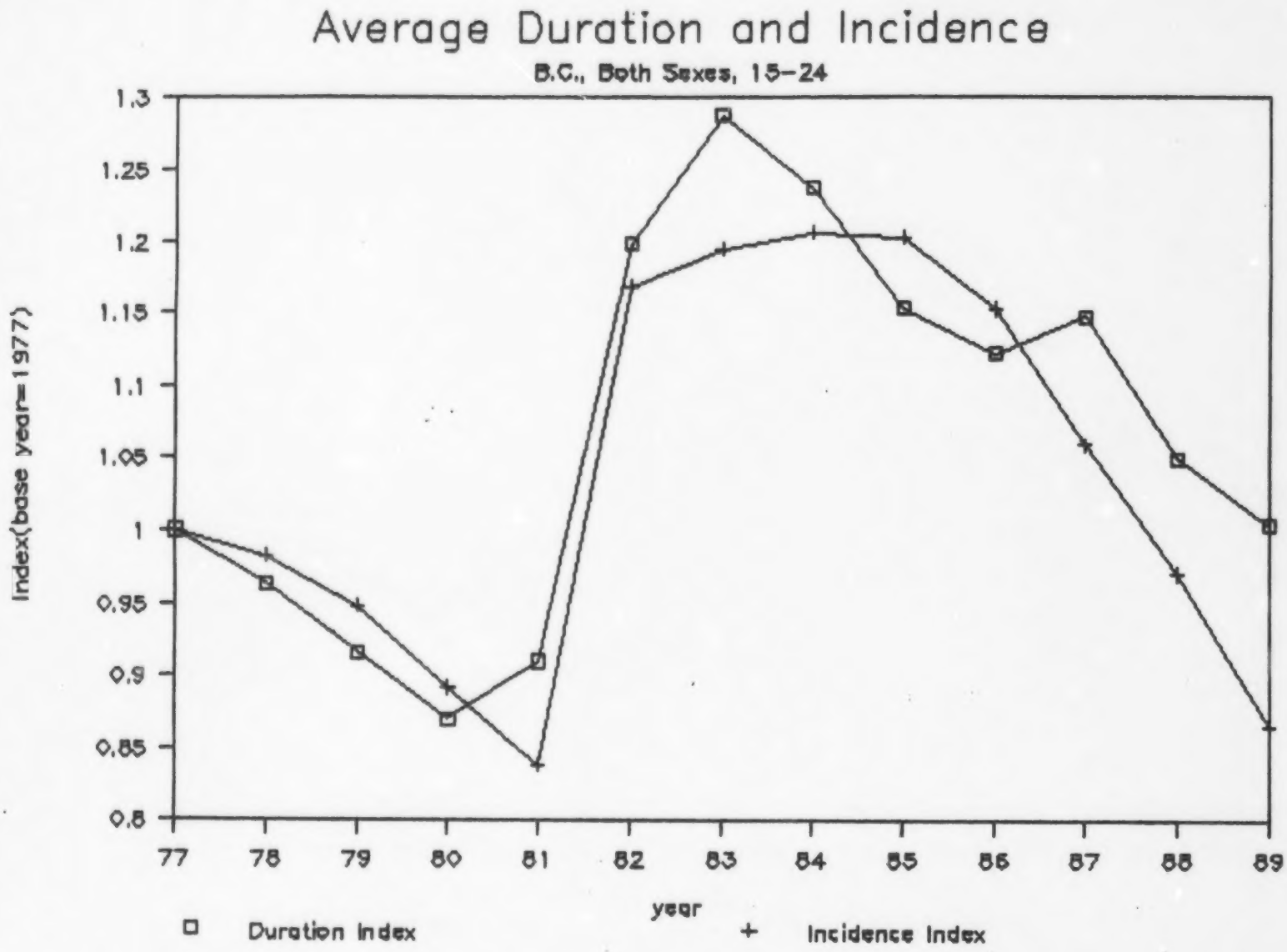
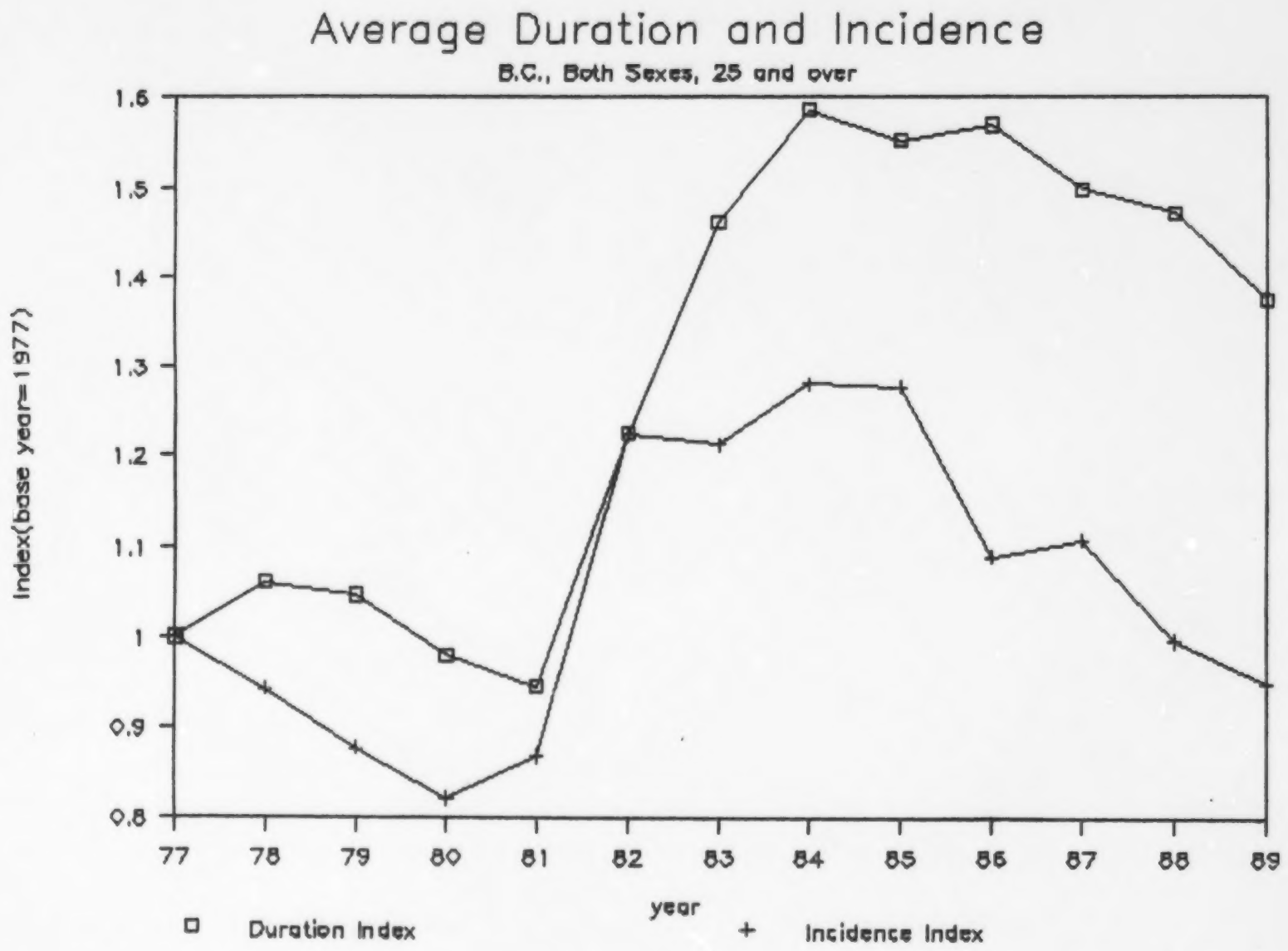

Average Duration and Incidence
B.C., Both Sexes, 15-24
Index(base year=1977)
1.3
1.25
1.2
1.15
1.1
1.05
1
0.95
0.9
0.85
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index

Figure A9


Average Duration and Incidence
B.C., Both Sexes, 25 and over
Index(base year=1977)
1.6
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
77
78
79
80
81
82
83
84
85
86
87
88
89
year
Duration Index
Incidence Index